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NO. 443 JULY 1981

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SOLAR-GEOPHYSICAL DATA

No. 443

Issued in two parts

Helen E. Coffey, Editor

Joe H. Allen, Chief
Solar-Terrestrial Physics Division

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Notes:

"432A 50" listed under 1980 Jun means that the sunspot drawings for Jun 1980 were contained in *Solar-Geophysical Data* Number 432 - Part I, beginning on page 50.

A = Part I, B = Part II.

----- = no data available.
blank = data not yet received.

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NOTE ON DELAY OF GROUPED SOLAR FLARE DATA:

Beginning with the July 1980 issue of *Solar-Geophysical Data*, we planned to publish the final listing of solar flares 13 months, rather than 6 months, from the date of observation. Although this schedule has not been met since the July 1980 issue was published, we and our colleagues at the Meudon Observatory plan to return to the 13-month delay as soon as possible. This new schedule will cause the Daily Flare Index and the Regional Flare Index to appear 13 and 14 months from the date of observation. At the same time we are suspending indefinitely publication of the Abbreviated Calendar Record. We deeply regret this situation, but the volume of data recorded during sunspot maximum and computer conversion problems at the Meudon Observatory and at NGSDC have forced these greater delays on us.

For researchers who need the comprehensive solar flare data more promptly, NGSDC plans to generate in the next few weeks "preliminary" listings from January 1980 through the "current" month that lies 13 months from the month of observation. These complete tabulations will lack the final Meudon corrections, and will only be published after they have been made. Nevertheless, printouts for this period will be available on request, if they be recognized as "preliminary" when used in research projects. A fee may be charged for reproducing these data. Please contact the editor, Helen E. Coffey, at (303) 497-6223 or telex 45897 SOLTERWARN BDR.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JANUARY 1981

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
01	260	ONDR	44	NS	0900.0E		295.0D	40			
	410	LEAR	8	S	0853.3	0853.5	.3	20			
	245	LEAR	8	S	0853.3	0853.3	.3	180			
	606	LEAR	8	S	0411.8	0412.1	.8	24			
	245	LEAR	8	S	0412.3	0412.3	.5	31			
	410	LEAR	8	S	0412.5	0412.6	.5	87			
	234	POTS	41	F	0711.6	0713.0	2.7	200.0	20.0		
	245	LEAR	8	S	0916.1	0916.3	.5	100			
	234	POTS	4	S/F	0916.2	0916.4	.4	180.0	20.0		
	234	POTS	4	S/F	1228.3	1228.6	.5	220.0	10.0		
	260	ONDR	8	S	1228.6	1228.6	.3	148			
	2800	OTTA	20	GRF	1510.0	1555	160.0	3.2	1.8		
	9400	HUAN		S	1524.7	1548.2	54.4	5.1	3.2		L
02	260	ONDR	44	NS	0840.0E		265.0D	40			
	245	LEAR	8	S	0307.5	0307.6	.1	16			
	245	LEAR	4	S/F	0442.8	0443.0	3.0	69			
	234	POTS	4	S/F	1123.2	1123.5	.8	250.0	5.0		
	29	UPIC	42	SER	1216.8	1217.5U	6.9				
	29	UPIC	42	SER	1216.8	1217.5U	6.9				
	536	ONDR	2	S/F	1226.5	1227.5	1.8	13	1		
	234	POTS	41	F	1401.6	1403.2	1.9	100.0	1.0		III
	113	POTS	41	F	1401.6	1401.7	2.0	2000.0	35.0		III
03	260	ONDR	44	NS	0850.0E	1048	150.D	8			
	3750	TYKW	5	S	0053.0	0055	15.0	1.5	.7		
	3750	TYKW	45	C	0251.0	0253.4	8.0	9	2.5		
	2000	TYKW	5	S	0252.5	0253.5	1.5	3	1		
	2000	TYKW	5	S	0256.0	0257.3	4.0	1	.4		
	3750	TYKW	29	PBI	0259.0		15.0	2	1		
	245	LEAR	8	S	0619.3	0619.6	.7	13			
	245	LEAR	8	S	0654.5	0654.6	.1	43			
	410	LEAR	8	S	0835.3	0836.1	1.0	20			
	245	LEAR	8	S	0835.5	0836.1	.8	35			
	930	BORD	41	F	1027.6	1027.7	1.4	16.0	2.0		
	29	UPIC	45	C	1152.3	1153.0	1.5				
	29	UPIC	45	C	1152.3	1153	1.5				
	113	POTS	8	S	1211.2	1211.3	.2	700.0	250.0		
	930	BORD	41	F	1415.3	1415.3	.3	28.0	2.0		
	2800	OTTA	1	S	1838.0	1839	1.2	5.4	2.7		
	2800	OTTA	30	PBI	1839.2	1839.2	6.0	2.6	1.3		
	2800	OTTA	8	S	1839.8	1840	.5	3.6	1.8		
	245	SGMR	8	S	1935.1	1935.5	1.2	39			
	245	PALE	8	S	1935.1	1935.3	.9	32			
	9400	HUAN		S	2226.8	2228.5	3.5	30.7	11.4		8
04	245	LEAR	43	NS	0246.0	0328.1	59.0	34			
	260	ONDR	44	NS	0900.0E		300.0D	14			
	245	PALE	43	NS	1814.0	1840.1	564.0	80			
	3750	TYKW	21	GRF	0143.0	0150	50.0	2	1		
	3750	TYKW	5	S	0215.0	0215.6	3.0	1	.3		
	245	LEAR	8	S	0237.8	0239.8	1.3	43			
	245	LEAR	8	S	0554.3	0554.3	.3	21			
	245	LEAR	8	S	0702.6	0702.6	.2	150			
	245	LEAR	8	S	0705.5	0705.6	.6	16			
	245	LEAR	8	S	0828.1	0828.1	.2	170			
	245	LEAR	47	GB	0905.6	0905.8	.4	560			
	410	LEAR	8	S	0905.6	0905.8	.5	72			
	430	KRAK	8	S	0905.6	0905.7	.3	90			
	260	ONDR	8	S	0905.8	0905.8	.3	118			
	2950	GORK	20	GRF	0912.0	0923.5	22.5	8.0			
	930	BORD	41	F	0922.3	0923.5	1.5	35.0	2.0		
	810	KRAK	8	S	0923.3	0923.5	.2	37			
	29	UPIC	45	C	1042.4	1042.5	.6				
	29	UPIC	45	C	1042.4	1042.5	.6				
	29	UPIC	2	S/F	1227.6	1227.8	.4				
	29	UPIC	2	S/F	1227.6	1227.8	.4				
	2800	OTTA	20	GRF	1900.0	1945	130.0	2.8	1.4		
05	245	LEAR	43	NS	0105.5	0138.0	390.0	60			
	200	GORK	44	NS	0634.0E		305.0D		5.0		
	127	TORN	44	NS	0720.0E	1056.8	430.0D	32000.0	5.5		V2
	260	ONDR	44	NS	0857.0E		298.0D	14			
	200	HIRA	44	NS	2150.0E	0427	580.0D	25.0	5.0		WL
	245	LEAR	43	NS	2205.0	0835.8	769.0D	110			
	245	LEAR	8	S	0026.3	0026.6	.5	28			
	1000	TYKW	5	S	0511.5	0512.1	1.5	3	1.5		
	245	LEAR	8	S	0820.8	0821.1	.5	77			
	200	GORK	41	F	0836.0	0839.1	162.0	55.0			
	200	GORK			0836.0	0842.8		20.0			
	5200	BERN	22	GRF	0838.1	0839.7	14.0	12.0			ONLY PAPER REC
	2950	GORK	1	S	0838.5	0839.6	6.5	4.5	2.0		

SOLAR RADIO EMISSION
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DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
05	245	LEAR	8	S	0838.8	0839.3	1.0	67			
	100	GORK	41	F	0839.0	0846.8		1900.0			
	100	GORK	41	F	0839.0	0844.4		2800.0			
	100	GORK	41	F	0839.0	0839.4	10.0	200.0D			
	113	POTS	45	C	0839.0	0847.0	28.0	200.0	5.0		
	245	LEAR	8	S	0842.0	0842.1	.3	51			
	245	LEAR	8	S	0856.3	0856.6	.3	110			
	930	BORD	41	F	1604.2	1603	.7	22.0	2.0		
	2800	OTTA	4	S/F	1613.0	1616.5	11.0	14.4	4.8		
	245	PALE	8	S	1921.1	1921.8	1.0	24			
	2800	OTTA	24	R	2000.0	2004	4.0	2.6	1.3		
	2800	OTTA	27A	RF	2000.0		110.0	2.6	2.5		
	9400	HUAN		S	2000.1	2049.7	122.1	10.9	8.8		L
	2800	OTTA	24	R	2004.0		100.0	2.6			
	2800	OTTA	22	GRF	2012.0	2014	24.0	8.8	4.4		
	9400	HUAN		S	2012.6	2013.3	1.6	12.4	7.4		0
	9400	HUAN		S	2138.6	2139.2	1.3	32.6	20.2		L
	2695	PENT	3	S	2138.7	2139.2	3.0	10.4	4.0		
	2695	PENT	26	FAL	2144.0	2150	6.0	-2.6	-1.3		
06	260	ONDR	44	NS	0841.0E		327.0D	29			
	100	HIRA	46	C	0425.6	0426.3	5.0	5000.0	630.0		0
	500	HIRA	45	C	0426.0	0435.3	18.0	65.0	15.0		0
	1000	TYKW	5	S	0426.0	0429.3	8.0	9	3		
	2000	TYKW	5	S	0426.0	0429.3	8.0	6	1.5		
	3750	TYKW	45	C	0426.0	0429	10.0	3.5	1		
	606	LEAR	4	S/F	0433.6	0435.3	2.9	51			
	410	LEAR	8	S	0435.5	0436.1	1.1	39			
	3750	TYKW	5	S	0552.0	0555	25.0	2	1		
	2000	TYKW	5	S	0552.0	0555	10.0	1	.5		
	930	BORD	41	F	0905.2	0905.3	.3	15.0	2.0		
	1470	POTS	40	F	1157.0	1203.4	10.0	2.4			
	3000	POTS	29	PBI	1202.0	1205.0	50.0	8.6			
	9500	POTS	29	PBI	1203.0	1203.4	52.0	7.8			
	29	UPIC	2	S/F	1212.3	1212.4	.5				
	29	UPIC	2	S/F	1212.3	1212.4	.5				
07	127	TORN	44	NS	1040.0E	1116.6	200.0D	90.0	4.0		V1
	245	SGMR	43	NS	1219.0	1744.3	542.0D	55			
	200	HIRA	44	NS	2150.0E	0217	580.0D	55.0	5.0		ML
	3750	TYKW	21	GRF	0230.0	0250	170.0	3.5	2		
	2000	TYKW	20	GRF	0250.0	0415	150.0	2	1		
	3750	TYKW	5	S	0405.0	0415.7	25.0	3	1		
	245	LEAR	8	S	0604.5	0604.8	.3	96			
	245	LEAR	8	S	0820.5	0820.6	.1	100			
	2950	GORK	1	S	0838.7	0839.0	.6	9.0	4.5		
	245	LEAR	8	S	0912.1	0912.3	.4	100			
	260	ONDR	2	S/F	1238.2	1243.0	6.0	9	5		
	536	ONDR	2	S/F	1241.0	1243.0	4.0	14	8		
	1470	POTS	4	S/F	1241.0	1243.0	9.0	14.0			
	930	BORD	45	C	1241.0	1242.8	5.0	25.0	8.0		
	3000	POTS	4	S/F	1241.0	1243.0	4.0	12.0			
	430	KRAK	4	S/F	1241.5	1242.8U	2.7	120	30		
	810	KRAK	3	S	1241.5	1243.0	2.5	35	8		
	808	ONDR	2	S/F	1242.0	1242.8	3.0	20	8		
	9400	HUAN		S	1255.4	1312.5	70.7	8.5	4.2		0
	2800	OTTA	1	S	1534.5	1535.3	2.5	5.0	1.8		
	4995	SGMR	8	S	1534.8	1535.1	2.0	19			
	245	SGMR	8	S	1534.8	1535.1	2.0	19			
	2800	OTTA	20	GRF	1620.0	1710	160.0	8.4	4.2		
	9400	HUAN		S	1714.1E	1731.3U	51.4U	6.8	2.6		0
	8800	PALE	8	S	1903.1	1905.1	.2	15			
	15400	PALE	8	S	1903.1	1903.3	.2	28			
	2800	OTTA	2	S/F	1907.8	1909	2.2	6.0			
	606	SGMR	8	S	1908.6	1909.1	1.4	190			
	606	PALE	8	S	1909.0	1909.3	.3	52			
	2800	OTTA	21	GRF	1920.0	1930	120.0	4.2	2.1		
	9400	HUAN		S	1929.0	1955.2	66.7	5.1	2.4		L
	606	SGMR	4	S/F	1932.5	1936.1	6.5	170			
	410	SGMR	8	S	1934.6	1936.3	1.9	96			
	2800	OTTA	1	S	2039.0	2041.8	7.0	3.0	1.5		
	245	PALE	47	GB	2104.0	2104.1	1.1	820			
	15400	PALE	8	S	2106.5	2106.6	.1	24			
08	245	LEAR	43	NS	0001.5	0156.6	653.5D	130			
	100	HIRA	43	NS	0032.0	0219	310.0	400.0	20.0		SL
	100	GORK	44	NS	0630.0E		300.0D		5.0		
	127	TORN	44	NS	0830.0E	1255.1	350.0D	90.0	5.6		V1,DISTURBED
	260	ONDR	44	NS	0922.0E		287.0D	34			
	245	SGMR	43	NS	1218.0	1843.8	544.0D	62			
	200	HIRA	44	NS	2149.0E	2330	580.0D	45.0	15.0		WL
	100	HIRA	44	NS	2149.0E	2216	580.0D	60.0	10.0		
	245	LEAR	43	NS	2207.0	0753.8	768.0D	160			
	2000	TYKW	20	GRF	0135.0	0300	260.0	12	7		
	3750	TYKW	20	GRF	0135.0	0250	260.0	17	9		

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DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
08	9400	TYKW	20 GRF	0145.0	0250	240.0	12	6		
	2000	TYKW	45 C	0615.0	0618.3	4.0	37	3		
	3750	TYKW	45 C	0615.0	0618.3	4.0	8	1		
	9400	TYKW	5 S	0617.5	0618.3	1.5	3	1		
	1000	TYKW	5 S	0618.0	0618.3	.7	4	1		
	2695	LEAR	8 S	0618.0	0618.1	.5	20			
	606	LEAR	8 S	0618.1	0618.3	.2	16			
	234	POTS	42 SER	0740.4	0740.8	21.0	170.0	1.0		III
	930	BORD	46 C	1222.0	1225.8	10.5	52.0	7.0		
	1470	POTS	4 S/F	1222.0	1225.5	18.0	23.0			
	808	ONDR	41 F	1222.5	1231.8	11.0	28	10		
	536	ONDR	41 F	1223.0	1224.8	10.0	55	6		
	3000	POTS	40 F	1223.0	1230.0	32.0	19.0			
	810	KRAK	3 S	1223.5	1226.0	6.5	27	9		
	2650	DWIN	2 S/F	1224.0	1228	7.0	35.0	15.0		
	430	KRAK	46 C	1226.5	1226.5	9.0U	170	18		
	9400	HUAN	S	1228.0	1235.1	26.5	8.5	2.9		0
	9500	POTS	22 GRF	1230.0	1235.0	25.0	9.6			
	810	KRAK	8 S	1232.0	1232.3	.5	35			
	2800	OTTA	20 GRF	1535.0	1604	60.0	4.6	1.6		
	9400	HUAN	S	1823.3	1832.7	21.9	3.4	1.3		0
	9400	HUAN	S	1910.9	1925.3	59.4	5.1	2.6		0
	245	PALE	4 S/F	2320.1	2321.6	2.9	100			
09	200	GORK	44 NS	0628.0E		302.0D		5.0		
	100	GORK	44 NS	0630.0E		300.0D		5.0		
	127	TORN	44 NS	0830.0E	1346.6	370.0D	4500.0	8.7		V2
	260	ONDR	44 NS	0850.0E		320.0D	51	7		
	245	SGMR	43 NS	1218.0	1237.3	545.0D	74			
	100	HIRA	44 NS	2148.0E	0439	580.0D	70.0	5.0		WL
	200	HIRA	44 NS	2148.0E	0353	580.0D	85.0	25.0		ML
	245	LEAR	43 NS	2207.0	0736.8	768.0D	150			
	3750	TYKW	21 GRF	0120.0	0200	100.0	3	1.5		
	2000	TYKW	20 GRF	0120.0	0200	100.0	2	1		
	3750	TYKW	5 S	0234.0	0238	10.0	2	1		
	3750	TYKW	5 S	0310.0	0310.7	8.0	150	30		
	9400	TYKW	45 C	0310.0	0310.7	5.0	240	40		
	2000	TYKW	5 S	0310.0	0310.9	8.0	134	30		
	35000	NAGO	5 S	0310.0	0310	1.0	13.0			
	8800	MANI	4 S/F	0310.0	0310.8	4.0	310			
	8800	LEAR	4 S/F	0310.0	0310.6	4.0	300			
	4995	MANI	4 S/F	0310.1	0310.8	4.4D	220			
	4995	PALE	4 S/F	0310.1	0310.6	2.7	170			
	15400	LEAR	8 S	0310.1	0310.6	1.2	150			
	4995	LEAR	4 S/F	0310.1	0310.6	4.0	180			
	8800	PALE	4 S/F	0310.1	0310.6	3.9	280			
	2695	PALE	4 S/F	0310.3	0310.6	3.5	170			
	17000	NOBE	3 S	0310.3	0310.6	.9	119.0			R
	17000	NOBE	29 PBI	0310.3	0311.2	73.0	9.0			0
	15400	PALE	8 S	0310.3	0310.6	.8	139			
	2695	LEAR	4 S/F	0310.3	0310.8	3.8	150			
	1415	PALE	4 S/F	0310.3	0311.1	2.5	60			
	1000	TYKW	45 C	0310.4	0311.1	7.0	45	4		
	1415	MANI	4 S/F	0310.5	0311.1	5.5D	45			
	2695	MANI	4 S/F	0310.5	0311.1	4.3D	170			
	9400	TYKW	29 PBI	0315.0		100.0	9	2		
	2000	TYKW	29 PBI	0318.0		100.0	4	2		
	3750	TYKW	29 PBI	0318.0		100.0	6	2.5		
	3750	TYKW	45 C	0459.0	0504	15.0	2	1		
	9100	GORK	21 GRF	0702.6	0750.4	190.0	10.0	4.0		
	3200	BERN	1 S	0951.1	0951.8	36.0	.0			ONLY PAPER REC
	5200	BERN	1 S	0951.1	0951.8	36.0	16.0			ONLY PAPER REC
	1470	POTS	3 S	0951.5	0953.2	3.5	5.0			
	9500	POTS	29 PBI	0951.5	0951.8	34.0	8.0			
	2950	GORK	2 S/F	0951.6	0951.9	6.1	6.0			
	9100	GORK	1 S	0951.6	0951.9	2.2	9.0			
	3000	POTS	4 S/F	0951.8	0952.0	3.2	8.0			
	3000	POTS		0951.8	0953.0		8.0			
	2800	OTTA	1 S	2101.2	2102	1.0	7.8	3.9		
	2695	PENT	29 PBI	2103.0	2103	8.0	2.6	1.0		
10	100	GORK	44 NS	0630.0E		294.0D		5.0		
	200	GORK	44 NS	0631.0E		295.0D		5.0		
	260	ONDR	44 NS	0810.0E		368.0D	91	5		
	127	TORN	44 NS	1000.0E	1041.5	280.0D	680.0	20.0		V1
	245	SGMR	43 NS	1218.0	1550.0	546.0D	19			
	100	HIRA	44 NS	2149.0E	0242	580.0D	120.0	20.0		ML
	200	HIRA	44 NS	2149.0E	0245	580.0D	20.0	10.0		ML
	245	LEAR	43 NS	2207.0	0736.8	768.0D	150			
	410	PALE	47 GB	0045.6	0046.1	.7	1700			
	245	PALE	47 GB	0046.3	0046.3	2.2	2400			
	3750	TYKW	5 S	0105.0	0106.4	5.0	3	1		
	2000	TYKW	5 S	0106.0	0106.7	2.0	2	1		
	3750	TYKW	21 GRF	0230.0	0245	240.0	6	3		
	2000	TYKW	21 GRF	0240.0	0400	200.0	4	2		

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DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
10	9400	TYKW	20	GRF	0240.0	0300	80.0	4	2		
	3750	TYKW	45	C	0405.0	0407.3	20.0	2	1		
	3750	TYKW	5	S	0457.0	0459.2	10.0	50	12		
	9400	TYKW	5	S	0458.0	0459.3	3.0	21	10		
	2000	TYKW	5	S	0458.0	0459.2	12.0	14	3		
	4995	LEAR	4	S/F	0458.1	0459.1	3.0	59			
	2695	LEAR	4	S/F	0458.3	0459.0	2.3	31			
	8800	LEAR	4	S/F	0458.3	0459.1	2.3	39			
	17000	NOBE	20	GRF	0458.6	0508.2	46.0	9.0			0
	9400	TYKW	29	PBI	0501.0		40.0	8	4 U		RAIN
	3750	TYKW	29	PBI	0507.0		20.0	5	2		
	100	GORK	8	S	0849.1	0849.5	1.0	550.0D			
	2950	GORK	1	S	0949.0	0949.2	1.6	2.0	1.0		
	100	GORK	4	S/F	1022.9	1023.6	1.5	1000.0D			
	5200	BERN	3	S	1255.0	1256.0	10.0	41.0			ONLY PAPER REC
	930	BORD	46	C	1255.0	1255.9	2.0	129.0	3.0		
	2650	DWIN	1	S	1255.0	1256	2.0	15.0	10.0		
	3200	BERN	3	S	1255.0	1256.0	10.0	.0			ONLY PAPER REC
	11800	BERN	3	S	1255.0	1256.0	10.0	55.0			ONLY PAPER REC
	10715	DWIN	2	S/F	1255.0	1256	2.0	40.0	20.0		
	4995	SGMR	8	S	1255.1	1256.1	1.7D	28			
	15400	SGMR	8	S	1255.1	1256.1	1.9D	13			
	1415	SGMR	4	S/F	1255.1	1256.1	3.7D	11			
	2695	SGMR	8	S	1255.3	1256.1	1.7D	16			
	8800	SGMR	8	S	1255.3	1256.1	1.8D	47			
	9400	HUAN		S	1255.3	1256.2	1.2	34.0	16.7		R
	808	ONDR	45	C	1255.3	1256.3	1.5	50	8		
	3000	POTS	3	S	1255.5	1256.2	2.5	20.0			
	1470	POTS	3	S	1255.5	1256.4	3.5	11.0			
	9500	POTS	4	S/F	1255.5	1256.3	2.0	29.0			
	606	SGMR	8	S	1255.8	1256.1	.5	37			
	810	KRAK	4	S/F	1255.8	1256.5	1.2	170	7		
	536	ONDR	8	S	1256.4	1256.4	.2	25			
	2695	PENT	20	GRF	2025.0	2100	105.0	3.0			
11	127	TORN	44	NS	0720.0E	1205.2	440.0D	340.0	20.0		V1
	260	ONDR	44	NS	0823.0E		345.0D	.9			
	245	PALE	43	NS	1912.0	1952.6	519.0D	45			
	200	HIRA	44	NS	2147.0E	0155	230.0D	20.0	5.0		WL
	3750	TYKW	5	S	0058.0	0058.1	.6	1.5	.4		
	9400	TYKW	5	S	0113.0	0113.6	2.0	1.5	.5		
	3750	TYKW	5	S	0113.0	0113.6	1.5	3	1		
	2000	TYKW	5	S	0113.3	0113.7	1.0	2	.5		
	245	LEAR	8	S	0637.6	0637.8	.4	130			
	245	LEAR	8	S	0716.1	0716.1	.2	180			
	245	LEAR	8	S	0833.8	0834.1	.7	160			
	113	POTS	4	S/F	0837.6	0837.8	.3	175.0	40.0		
	2950	GORK	20	GRF	0958.7	0959.3	11.7	4.5			
	113	POTS	4	S/F	1307.3	1307.4	.6	400.0	80.0		
	9400	HUAN		S	1823.4	1836.8	42.4	4.0	2.1		0
	2695	PENT	21	GRF	2133.0	2153	70.0	8.0	4.0		
	2695	PENT	1	S	2136.0	2137	1.3	2.4	1.2		
	2695	PENT	8	S	2138.5	2138.8	.3	61.0			
12	3750	TYKW	5	S	0519.0	0520.8	6.0	8	2.5		
	3750	TYKW	29	PBI	0525.0		15.0	1.5	.7		
	930	BORD	8	S	0909.5	0909.7	.3	21.0	1.0		
	810	KRAK	2	S/F	0912.7	0913.0	.5	33	5		
	650	GORK	1	S	0913.3	0914.8	2.0	3.6			
	930	BORD	46	C	0914.2	0914.8	1.0	39.0	5.0		
	950	GORK	4	S/F	0914.2	0914.8	1.0	28.0			
	2950	GORK	1	S	0914.4	0915.0	.7	2.7	1.4		
	930	BORD	8	S	1223.3	1223.3	.2	39.0	2.0		
	2800	OTTA	20	GRF	1825.0	1835	55.0	2.0	1.0		
13	260	ONDR	42	SER	0928.0	1019.5	133.0	13			
	930	BORD	3	S	1130.4	1130.7	.4	13.0	2.0		
	9400	HUAN		S	1138.8	1147.0	19.0	10.2	4.4		L
	245	SGMR	4	S/F	1312.5	1314.1	3.8D	280			
	410	SGMR	4	S/F	1313.1	1314.1	2.9D	34			
	606	SGMR	4	S/F	1313.6	1314.1	2.2	29			
	930	BORD	8	S	1445.4	1445.5	.2	55.0	1.0		
	2800	OTTA	8	S	1835.8	1836	.5	1.8	.9		
	2695	PENT	8	S	2152.8	2152.9	.2	1.8			
14	260	ONDR	44	NS	0945.0E		275.0D	28			
	245	LEAR	43	NS	2209.0	0507.3	767.0D	110			
	245	LEAR	43	NS	2245.0	0803.3	690.0D	190			
	1415	SGMR	47	GB	0359.0	2059.6	1021.3D				
	930	BORD	46	C	0818.2	0818.6	.5	16.0	2.0		
	430	KRAK	8	S	0825.0	0825.0	.2	180			
	430	KRAK	8	S	0900.0	0900.0	.2	70			
	2950	GORK	1	S	0937.8	0938.4	2.4	3.7	1.5		
	234	POTS	4	S/F	1028.6	1028.7	.3	175.0	15.0		
	260	ONDR	46	C	1225.5	1237.4	9.0	135	4		

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DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
14	536	ONDR	42 SER	1229.5	1234	9.0	107			
	113	POTS	42 SER	1230.8	1237.2	6.6	180.0	1.0		III
	234	POTS	42 SER	1230.8	1237.1	6.6	1200.0	3.0		III
	430	KRAK	42 SER	1232.5	1237.0	5.5	300			
	808	ONDR	42 SER	1234.0	1237.3	9.0	65			
	930	BORD	42 SER	1234.0	1237.2	3.6	82.0	2.0		
	810	KRAK	42 SER	1234.8	1237.5	3.3	64			
	9400	HUAN	S	2049.2	2100.5	31.2	9.5	3.6		L
	410	SGMR	4 S/F	2059.0	2059.3	3.6D	210			
	2800	OTTA	4 S/F	2059.0	2100.4	3.0	37.0	13.0		
	1415	SGMR	4 S/F	2059.3	2100.3	2.5D	17			
	245	SGMR	47 GB	2059.3	2100.1	3.3	4000			
	4995	SGMR	8 S	2059.6	2100.3	1.4D	17			
	2695	SGMR	8 S	2059.6	2100.3	2.0	25			
	2695	PALE	8 S	2100.0	2100.3	.8	37			
	1415	PALE	8 S	2100.0	2100.3	.8	18			
	4995	PALE	8 S	2100.1	2100.5	.5	32			
	15400	PALE	47 GB	2100.5	2105.8	8.0	24			
	2800	OTTA	29 PBI	2102.0	2102	17.0	3.4	2.8		
	8800	PALE	8 S	2102.8	2103.0	.3	18			
	3750	TYKW	45 C	2340.0	2340.3	1.0	3	1		
15	200	HIRA	43 NS	0212.0	0405	230.0	55.0	5.0		0
	260	ONDR	44 NS	0835.0E		333.0D	71	3		
	245	SGMR	43 NS	1215.0	1741.5	555.0D	170			
	245	PALE	43 NS	1731.0	1748.6	623.0D	28			
	3750	TYKW	5 S	0418.0	0418.8	2.0	1.5	.5		
	3750	TYKW	20 GRF	0500.0	0520	50.0	2	1		
	234	POTS	4 S/F	1044.4	1044.6	1.3	350.0	10.0		
	930	BORD	8 S	1107.2	1107.2	.2	53.0	2.0		
	2800	OTTA	20 GRF	1515.0	1535	95.0	3.4	1.7		
	2800	OTTA	46F C	1703.0	1704.4	9.0	15.6	5.2		
	2800	OTTA	30 PBI	1712.0	1712	60.0	4.2	2.1		
	2800	OTTA	1 S	1721.2	1722	2.0	2.8	1.4		
	2800	OTTA	20 GRF	1845.0	1950	135.0	2.8	1.9		
	245	PALE	47 GB	1930.3	1930.3	.2	800			
	245	PALE	8 S	2000.6	2000.8	.4	330			
	2695	PENT	20 GRF	2115.0	2120	40.0	2.6			
16	260	ONDR	44 NS	0850.0E		318.0D	24			
	245	LEAR	43 NS	2300.1	0757.8	715.9D	86			
	1415	MANI	47 GB	0339.0	0342.6	7.0D	1399			
	2695	MANI	47 GB	0341.5	0343.5	4.5	1199			
	410	LEAR	8 S	0743.8	0744.1	.3	28			
	430	KRAK	45 C	0830.0	0835.3	11.5	70	9		
	650	GORK		0831.0	0834.6		23.0			
	650	GORK		0831.0	0836.6		11.0			
	650	GORK	46 C	0831.0	0832.1	8.0	6.5			
	950	GORK		0832.2	0837.4		3.0			
	950	GORK		0832.2	0855.6		36.0			
	950	GORK	46 C	0832.2	0832.9	6.0	3.0			
	930	BORD	45 C	0834.4	0835.0	1.6	162.0	7.0		
	3000	POTS	3 S	0834.5	0835.0	1.5	7.0			
	1470	POTS	4 S/F	0834.5	0835.0	2.0	9.0			
	1415	LEAR	8 S	0834.5	0834.8	1.0	27			
	2950	GORK	1 S	0834.5	0834.7	.7	5.0	2.5		
	245	LEAR	8 S	0834.6	0834.8	.5	200			
	410	LEAR	4 S/F	0834.8	0834.8	3.3	60			
	234	POTS	4 S/F	0834.8	0834.8	.4	575.0	20.0		
	606	LEAR	4 S/F	0834.8	0835.0	3.0	31			
	810	KRAK	8 S	0835.0	0835.1	.5	200	8		
	127	TORN	41 F	1307.3	1316.0	165.0	40.0	3.0		
	260	ONDR	4 S/F	1312.0	1313.8	3.0	104	46		
	234	POTS	4 S/F	1312.4	1313.9	2.1	430.0	70.0		III
	127	TORN	47 GB	1312.4	1314.1	2.7	4500.0	630.0		
	113	POTS	4 S/F	1312.5	1313.9	2.4	700.0	100.0		III
	29	UPIC	45 C	1312.5	1314.4	3.0				
	245	SGMR	4 S/F	1312.5	1314.1	3.8D	280			
	29	UPIC	45 C	1312.5	1314.4	3.0				
	410	SGMR	4 S/F	1313.1	1314.1	2.9D	34			
	606	SGMR	4 S/F	1313.6	1314.1	2.2	29			
	245	PALE	4 S/F	1942.8	1944.6	2.3	190			
	245	SGMR	4 S/F	1942.8	1944.8	2.3	220			
	2800	OTTA	8 S	1944.2	1944.5	.5	7.2			
	2695	PENT	1 S	2215.0	2216.5	3.0	2.6	1.3		
	3750	TYKW	20 GRF	2325.0	2328	30.0	2	1		
17	260	ONDR	44 NS	0850.0E		323.0D	10			
	245	LEAR	43 NS	2215.8	0723.1	624.2D	93			
	606	LEAR	4 S/F	0306.8	0308.8	3.3	55			
	3750	TYKW	5 S	0307.7	0308.0	1.0	4	1.5		
	2000	TYKW	45 C	0307.7U	0308.0	2.5U	6	2		
	1000	TYKW	45 C	0307.7	0308.6	3.5	12	3		
	606	PALE	8 S	0307.8	0308.8	1.2	24			
	245	LEAR	8 S	0307.8	0308.1	1.0	52			

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17	410	LEAR	4 S/CF	0307.0	0308.3	2.5	18			
	245	PALE	8 S	0307.8	0308.1	.3	36			
	1415	PALE	8 S	0308.0	0308.6	.1	32			
	1415	LEAR	8 S	0308.0	0308.6	2.0	33			
	9400	TYKW	5 S	0447.0	0448.5	5.0	3	1.5		
	29	UPIC	4 S/CF	1107.0	1108.0	2.3				
	29	UPIC	4 S/CF	1107.0	1108.0	2.3				
	2800	OTTA	1 S	1423.7	1424	1.0	3.4	1.2		
18	260	ONDR	44 NS	0820.0E		190.D	31			
	245	PALE	43 NS	1915.1	2312.3	499.9D	45			
	2000	TYKW	5 S	0115.0	0117	10.0	1.5	.7		
	3750	TYKW	5 S	0115.0	0117	20.0	2	1		
	3750	TYKW	20 GRF	0212.0	0219	30.0	2	1		
	2950	GORK	1 S	0830.6	0830.7	.3	5.0	2.5		
	2800	OTTA	20 GRF	1650.0	1715	110.0	2.0	1.0		
19	200	GORK	44 NS	0627.0E		303.0D		5.0		
	3750	TYKW	45 C	0100.0	0103	5.0	3	1.5		
	3750	TYKW	29 PBI	0105.0		25.0	1.5	.7		
	3750	TYKW	20 GRF	0340.0	0430	150.0	2.5	1.5		
	2950	GORK	1 S	0734.4	0735.0	1.0	5.2	2.5		
	113	POTS	4 S/CF	0740.0	0749.8	16.0	200.0	60.0		III
	430	KRAK	27 RF	0825.0	0828.0	13.5	34	4		
	2800	OTTA	20 GRF	1505.0	1539	85.0	3.4	1.2		
	606	MANI	4 S/CF	2328.0	2328.8	11.5	300			
20	245	LEAR	43 NS	0505.0	0713.8	280.5	70			
	606	LEAR	8 S	0711.3	0711.5	.3	10			
	410	LEAR	8 S	0711.3	0711.3	.8	130			
	430	KRAK	1 S	1300.0	1300.2	.5	16	8		
	430	KRAK	42 SER	1322.0	1323.0	2.5	60			
	430	KRAK		1322.0	1324.2		50			
	930	BORD	41 F	1342.2	1342.5	.5	25.0	2.0		
	2800	OTTA	20 GRF	1925.0	1950	50.0	2.0	1.2		
21	2800	OTTA	20 GRF	1715.0	1720	80.0	2.4	1.4		
22	410	LEAR	4 S/CF	0008.8	0010.6	2.5	25			
	245	LEAR	8 S	0010.1	0010.3	1.0	45			
	245	LEAR	8 S	0137.1	0137.1	.2	320			
	127	TORN	42 SER	1107.7	1115.6	10.0	10.0	2.0		
	245	SGMR	4 S/CF	1516.5	1519.1	6.3	42			
	2800	OTTA	1 S	1517.0	1517.5	1.5	7.2	3.6		
23	245	LEAR	43 NS	2326.8	0809.5	615.2D	48			
	9400	TYKW	45 C	0027.0	0027.8	1.5	6	1.5		
	410	LEAR	4 S/CF	0120.8	0121.1	2.5	10			
	245	LEAR	4 S/CF	0120.8	0121.1	2.5	70			
	930	BORD	41 F	1148.5	1148.6	.2	18.0	2.0		
	260	ONDR	42 SER	1315.5	1324.3	11.0	28			
	127	TORN	46 C	1323.7	1324.5	2.5	2200.0	60.0		
	245	SGMR	4 S/CF	1324.0	1324.5	4.3	41			
	113	POTS	4 S/CF	1324.1	1324.6	1.9	1000.0	30.0		III
	29	UPIC	45 C	1324.2	1324.7	1.9				
	29	UPIC	45 C	1324.2	1324.7	1.9				
	8800	SGMR	4 S/CF	1540.1	1546.3	6.5	39			
	9400	HUAN	S	1547.5	1548.5	2.0	5.6	3.5		0
	245	LEAR	4 S/CF	2309.6	2310.6	2.9	200			
24	245	PALE	43 NS	1728.0	1855.3	806.0D	280			
	200	HIRA	44 NS	2144.0E	0106	610.0D	35.0	5.0		0
	245	LEAR	43 NS	2154.0	0250.3	859.0D	47			
	1000	TYKW	42 SER	0042.0	0045.7	28.0	20	.5U		
	1000	TYKW	45 C	0114.5	0114.9	12.0	35	5		
	410	LEAR	4 S/CF	0220.0	0220.8	3.1	16			
	245	LEAR	4 S/CF	0448.0	0450.6	3.3	300			
	3750	TYKW	45 C	0450.5	0450.8	4.0	16	3		
	2000	TYKW	45 C	0450.5	0452.4	4.0	8	1.5		
	1000	TYKW	45 C	0451.0	0452.3	2.0	17	3.5		
	260	ONDR	42 SER	0935.0	1011.3	79.0	62			
	113	POTS	8 S	0945.6	0945.7	.1	140.0	40.0		III
	260	ONDR	42 SER	1212.0	1222.0	126.0	13			
	127	TORN	40 F	1343.0	1346.2	7.0	50.0			
	2800	OTTA	20 GRF	1925.0	1930	75.0	2.6	1.3		
	606	PALE	8 S	2053.0	2053.6	1.1	03			
	1415	PALE	8 S	2153.0	2153.6	1.1D	38			
	2695	PENT	240AR	2200.0	2230	30.0	13.2	6.6		
	2695	PENT	1 S	2211.0	2215	10.0	6.0	3.0		
	245	PALE	4 S/CF	2250.6	2251.0	2.2	40			
	245	LEAR	8 S	2250.8	2251.1	.8	56			
25	100	GORK	44 NS	0623.0E		208.0D		5.0		
	127	TORN	44 NS	0700.0E	1121.2	470.0D	50.0	.9		VI
	260	ONDR	43 NS	0832.5		343.0D	74	3		

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DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
25	3750	TYKW	5 S	0218.0	0218.6	2.0	14	3.5		
	9400	TYKW	5 S	0218.0	0218.6	2.0	9	3		
	4995	LEAR	8 S	0218.3	0218.5	.5	22			
	8800	LEAR	8 S	0218.3	0218.5	.5	11			
	9400	TYKW	29 PBI	0220.0		30.0	3	1.5		
	3750	TYKW	29 PBI	0220.0		35.0	2	1		
	3750	TYKW	5 S	0407.5	0408.6	2.5	8	2.5		
	9400	TYKW	5 S	0408.4	0408.6	1.5	7	3		
	4995	LEAR	8 S	0408.5	0408.6	.3	20			
	8800	LEAR	8 S	0408.5	0408.6	.3	11			
	3750	TYKW	29 PBI	0410.0		15.0	2	1		
	2000	TYKW	20 GRF	0520.0	0620	110.0	2	1		
	3750	TYKW	21 GRF	0520.0	0612	105.0	5	2.5		
	9400	TYKW	21 GRF	0540.0	0617	85.0	19	8		
	3750	TYKW	20 GRF	0615.0	0620	40.0	3.5	2		
	9400	TYKW	5 S	0619.0	0619.7	2.0	6	1.5		
	35000	NAGO	20 GRF	0623.0	0629	30.0	14.0			
	15400	LEAR	4 S/F	0631.6	0634.1	6.7	21			
	200	HIRA	46 C	0652.8	0654.0	1.7	90.0	46.0		0
	100	HIRA	46 C	0653.1	0653.8	2.4	840.0	100.0		WL
	100	GORK	41 F	0711.0	0711.2	11.7	230.0D			
	100	GORK		0711.0	0722.7		230.0D			
	9100	GORK	45 C	0745.3	0745.7	5.3	15.0			
	9100	GORK		0745.3	0747.0		15.0			
	9100	GORK	1 S	0830.2	0830.5	1.1	7.0	3.5		
	9100	GORK	32 ABS	0834.0	0848.0	16.2	7.4			
	1470	POTS	45 C	0841.0	0921.5	77.0	460.0			
	100	GORK	4 S/F	0843.0	0850.6	9.0	70.0			
	3200	BERN	48 C	0845.0	0920.2	300.0	.0			ONLY PAPER REC
	35000	BERN	48 C	0846.0	0911.6	150.0	2047.0			
	5200	BERN	48 C	0846.6	0911.6	180.0	2568.0			
	8400	BERN	48 C	0846.6	0922.5	180.0	2240.0D			
	2950	GORK		0847.0	0912.0		1490.0			
	1415	MANI	47 GB	0847.0	0910.5	35.8D	130			
	2950	GORK		0847.0	0920.0		1850.0			
	2950	GORK		0847.0	0907.3		1120.0			
	2650	DWIN	49 GB	0847.0		80.0	510.0D			
	2950	GORK	45 C	0847.0	0855.9	61.0	148.0			
	2950	GORK		0847.0	0903.0		2065.0			
	1415	ATHN	4 S/F	0847.0	0921.1	59.2D	420			
	4995	ATHN	47 GB	0848.0	0920.0	83.1D	2500			
	2695	ATHN	47 GB	0848.1	0920.1	73.9D	2500			
	11800	BERN	48 C	0848.2	0911.6	160.0	3485.0			
	19600	BERN	48 C	0848.2	0911.6	210.0	3163.0			
	950	GORK	21 GRF	0848.3		60.0				
	4995	MANI	47 GB	0848.5	0911.5	36.0D	3000			
	650	GORK	21 GRF	0848.5	0902.0	47.5	20.0			
	2695	MANI	47 GB	0849.0	0912.6	35.0D	1700			
	606	MANI	47 GB	0849.0	0859.8	34.5D	70			
	8800	ATHN	47 GB	0849.6	0911.6	71.2	4800			
	10715	DWIN	49 GB	0850.0		80.0	1100.0D			
	8800	MANI	47 GB	0850.0	0911.5	35.0	3900			
	9100	GORK		0851.3	0906.3		3320.0			
	9100	GORK	46 C	0851.3	0903.0	77.0	1400.0			
	950	GORK	46 C	0851.3	0855.3	9.6	236.0			
	9100	GORK	29 PBI	0851.3	0948.0	102.0	120.0			
	9100	GORK		0851.3	0911.5		3470.0			
	950	GORK		0851.3	0856.8		339.0			
	810	KRAK	45 C	0852.5		3.5U	80 U			
	808	ONDR	45 C	0852.5	0855.4	8.0	152	64		
	650	GORK	4 S/F	0852.7	0859.9	9.2	50.0			
	113	POTS	46 C	0856.0	0859.0	49.0	3700.0			II
	127	TORN	27 RF	0856.0	0906.5	27.0	460.0	1.0		
	127	TORN	47 GB	0856.0	0858.5	4.0	23000.0	6400.0		
	100	GORK		0856.8	0859.0		8100.0			
	100	GORK		0856.8	0859.9		13500.0			
	100	GORK	46 C	0856.8	0858.4	5.5	280.0D			
	950	GORK	1 S	0901.4	0902.7	2.3	16.5	8.0		
	950	GORK	1 S	0905.0	0906.0	4.0	17.6			
	810	KRAK	29 PBI	0906.5E	0906.8	41.0	50	20		
	950	GORK	1 S	0917.3	0919.8	7.0	18.6			
	100	GORK		0934.3	0940.0		140.0			
	100	GORK	46 C	0934.3	0938.0	166.0E	125.0			
	100	GORK		0934.3	0945.5U		280.0D			
	2950	GORK	29 PBI	0948.0	0948.0	100.0E	78.0			
	113	POTS	42 SER	0952.8	1006.2	14.0	350.0	6.0		III
	127	TORN	8 S	1005.5	1005.7	1.0	1700.0	830.0		
	234	POTS	4 S/F	1024.2	1024.2	.1	200.0	20.0		
	29	UPIC	2 S/F	1121.3	1121.5	1.0				
	29	UPIC	2 S/F	1121.3	1121.5	1.0				
	9500	POTS	8 S	1133.4	1133.5	.6	8.9			
	29	UPIC	3 S	1141.2	1141.4	.5				
	29	UPIC	3 S	1141.2	1141.4	.5				
	410	SGMR	8 S	1252.5	1252.8	.5D	29			
	245	SGMR	8 S	1252.6	1253.1	.7	52			

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OUTSTANDING OCCURRENCES

JANUARY 1981

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
25	113	POTS	4	S/CF	1252.7	1252.8	.9	150.0	20.0		III
	29	UPIC	45	C	1252.7	1532	4.1				
	127	TORN	45	C	1252.7	1252.9	2.5	250.0			
	29	UPIC	45	C	1252.7	1253.2	4.1				
	2800	OTTA	20	GRF	1330.0	1400	85.0D	5.0			
	606	SGMR	8	S	1447.3	1447.5	.3D	63			
	930	BORD	41	F	1447.5	1447.6	.3	220.0	2.0		
	245	SGMR	8	S	1447.6	1447.8	.2	13			
	410	SGMR	8	S	1447.6	1447.8U	.2D	29.U			
	2800	OTTA	21	GRF	1505.0	1600	155.0	3.6	1.8		
	2800	OTTA	8	S	1514.7	1514.7	.5	13.0			
	2800	OTTA	20	GRF	1656.0	1710	35.0	5.0			
	9400	HUAN		S	1705.5	1709.8	11.8	6.6	2.6		0
	245	SGMR	8	S	1818.1	1818.3	.5	119			
	2800	OTTA	21	GRF	1910.0	1940	90.0	2.6	1.3		
	9400	HUAN		S	1913.3	1937.7	60.3	11.6	4.8		L
	15400	SGMR	4	S/CF	1931.6	1933.1	5.4	11			
	4995	SGMR	4	S/CF	1931.6	1933.1	5.4D	32			
	8800	SGMR	4	S/CF	1931.6	1933.1	5.5D	28			
	2800	OTTA	3	S	1932.0	1933.5	9.0	17.2	5.8		
	9400	HUAN		S	1932.0	1933.2	4.3	29.7	15.2		0
	1415	SGMR	4	S/CF	1932.0	1933.1	3.8D	11			
	2695	SGMR	8	S	1933.0	1933.1	.8D	16			
	1415	SGMR	8	S	2052.6	2053.6	1.5D	58			
	2695	SGMR	8	S	2052.8	2053.3	1.0	10			
	2800	OTTA	2	S/CF	2053.0	2053.5	2.0	9.2	2.0		
	606	SGMR	8	S	2053.8	2054.6	1.3D	56			
	35000	NAGO	20	GRF	2331.0	2354	44.0	4.0			
	9400	TYKW	21	GRF	2340.0	2350	35.0	7	3.5		
	17000	NOBE	20	GRF	2344.6	2352.2	17.0	9.0			0
	9400	TYKW	45	C	2346.5	2347.8	2.0	7	1.5		
	3750	TYKW	5	S	2351.0	2351.6	1.0	1.5	.5		
	9400	TYKW	5	S	2351.0	2351.6	1.0	11	4		
	1000	TYKW	45	C	2351.0	2351.7	1.0	15	3.5		
	410	LEAR	8	S	2358.0	2358.1	.1	30			
26	260	ONDR	44	NS	0040.0E		323.0D	34			
	245	SGMR	43	NS	1335.0	1349.0	489.0D	78			
	245	LEAR	8	S	0024.3	0024.3	1.2	34			
	3750	TYKW	28	PRE	0205.0	0250	45.0	13	6		
	9400	TYKW	28	PRE	0205.0	0208.7	45.0	82	10		
	1000	TYKW	5	S	0205.8	0205.9	.5	3	1		
	2000	TYKW	5	S	0205.9	0206.1	.7	1	.3		
	2000	TYKW	5	S	0208.5	0208.8	1.5	3.5	1		
	17000	NOBE	1	S	0208.5	0208.7	.6	24.0			0
	1000	TYKW	5	S	0208.6	0208.7	1.0	8	1.5		
	17000	NOBE	28	PRE	0209.2	0248.1	40.6	10.0			0
	2000	TYKW	28	PRE	0230.0	0250	20.0	4	1.5		
	1000	TYKW	28	PRE	0230.0	0248.6	20.0	6	1.5		
	200	HIRA			0247.6	0329		30.0			0
	200	HIRA			0247.6	0303		35.0			0
	200	HIRA	27	RF	0247.6	0317.3	65.0	40.0	11.0		0
	200	HIRA			0247.6	0255.6		25.0			0
	17000	NOBE	45	C	0249.9	0308.3	55.0	262.0			0
	17000	NOBE	29	PBI	0249.9	0344.8	18.0	13.0			0
	1000	TYKW	45	C	0250.0	0326.6	60.0	290	50		
	9400	TYKW	47	GB	0250.0	0308.4	70.0	540	150 D		
	3750	TYKW	45	C	0250.0	0312.7	70.0	485	140 D		
	2000	TYKW	45	C	0250.0	0312.8	70.0	160	50 D		
	606	PALE	4	S/CF	0251.0	0319.0	46.0D	39			
	8800	PALE	47	GB	0251.0	0308.3	46.0D	730			
	4995	PALE	47	GB	0251.0	0308.3	46.0D	520			
	410	PALE	4	S/CF	0251.0	0305.1	46.0D	40			
	1415	PALE	4	S/CF	0251.0	0315.1	46.0D	410			
	2695	PALE	4	S/CF	0251.0	0310.1	46.0D	280			
	15400	PALE	4	S/CF	0251.0	0308.3	46.0D	320			
	245	PALE	4	S/CF	0251.0	0303.0	46.0	260			
	35000	NAGO	5	S	0251.0	0308	46.0	67.0			
	4995	LEAR	47	GB	0251.1	0308.3	56.2	580			
	8800	LEAR	47	GB	0251.1	0308.3	56.0	640			
	100	HIRA	46	C	0251.5	0255.3	54.0	1000.0	37.0		WL
	100	HIRA			0251.5	0307.7		110.0			0
	15400	LEAR	47	GB	0253.5	0308.3	48.1	340			
	2695	LEAR	47	GB	0253.5	0308.3	53.8	270			
	500	HIRA	46	C	0304.0	0327.1	41.0	42.0	16.0		WR
	500	HIRA			0304.0	0318.1		39.0			WR
	1415	LEAR	47	GB	0304.0	0315.1	36.3	350			
	606	LEAR	47	GB	0304.1	0319.0	29.5	97			
	410	LEAR	47	GB	0314.0	0318.1	5.8	25			
	245	LEAR	47	GB	0314.8	0315.8	3.8	29			
	1000	TYKW	29	PBI	0350.0		40.0	3	1.5		
	2000	TYKW	29	PBI	0400.0		190.0	4	2		
	3750	TYKW	29	PBI	0400.0		190.0	16	7		
	9400	TYKW	29	PBI	0400.0		60.0	12	3.5		
	9400	TYKW	5	S	0716.6	0717.1	.9	6	2		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JANUARY 1981

DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
26	2800	TYKW	45 C	0720.0	0723.6	5.0	12	1.5		
	3750	TYKW	45 C	0721.0	0723.4	4.0	18	2		
	1000	TYKW	5 S	0721.0	0721.6	1.5	1.5	.5		
	9100	GORK	20 GRF	0722.7	0723.2	11.6	17.6	9.0		
	410	LEAR	8 S	0722.8	0723.3	.8	92			
	2950	GORK	1 S	0722.8	0723.3	1.4	13.0	6.5		
	8800	LEAR	8 S	0723.0	0723.3	1.3	15			
	4995	LEAR	8 S	0723.0	0723.3	1.6	20			
	1000	TYKW	5 S	0723.0	0723.5	1.5	3	1		
	9400	TYKW	5 S	0723.0	0723.4	1.5	13	4		
	245	LEAR	8 S	0723.1	0723.3	.5	150			
	5200	BERN	3 S	0723.2	0724.1	3.0	25.0			ONLY PAPER REC
	3200	BERN	3 S	0723.2	0724.1	3.0	.0			ONLY PAPER REC
	2695	LEAR	8 S	0723.3	0723.5	1.0	18			
	8400	BERN	22 GRF	0937.0	0941.6	30.0	25.0			
	2950	GORK	1 S	0937.2	0941.5	13.1	3.0	1.5		
	5200	BERN	22 GRF	0937.2	0941.6	40.0	13.0			
	3200	BERN	22 GRF	0939.5	0941.5	4.0	.0			ONLY PAPER REC
	9100	GORK	1 S	0940.6	0941.5	5.9	20.0	10.0		
	9500	POTS	3 S	0940.7	0941.6	2.3	18.0			
	11800	BERN	22 GRF	0940.7	0941.6	25.0	16.0			
	3000	POTS	1 S	0941.6	0941.7	.6	2.7			
	950	GORK	2 S/F	0944.1	0944.4	.9	2.6			
	650	GORK	1 S	0947.1	0947.5	.7	4.0	2.0		
	9100	GORK	1 S	1126.8	1127.0	3.1	11.0	5.0		
	2950	GORK	1 S	1127.0	1127.2	1.3	3.0	1.5		
	3000	POTS	1 S	1127.2	1127.5	.8	4.5			
	9500	POTS	1 S	1127.2	1127.4	2.8	7.7			
	3000	POTS	20 GRF	1230.0	1235.0	45.0	8.0			
	9500	POTS	20 GRF	1230.0	1238.0	50.0	10.0			
	9400	HUAN	S	1231.2	1242.3	38.6	11.3	6.3		L
	5200	BERN	22 GRF	1233.0	1237.7	30.0	14.0			
	11800	BERN	22 GRF	1233.3	1249.3	30.0	16.0			
	8400	BERN	22 GRF	1233.3	1238.0	30.0	17.0			
	9400	HUAN	S	1234.3	1235.1	1.9	9.7	6.1		L
	2800	OTTA	260 FAL	1530.0	1700	90.0	-3.4	-1.7		
	2800	OTTA	21 GRF	1705.0	1722	55.0	2.8	1.4		
	2800	OTTA	1 S	1750.0	1750.5	1.5	1.4	.7		
	9400	HUAN	S	1944.2	2005.0	47.6	8.1	5.2		0
	2800	OTTA	20 GRF	1945.0	1955	100.0	2.8	2.0		
	9400	HUAN	S	2020.5	2021.1	1.2	6.5	4.4		0
	9400	TYKW	5 S	2243.0	2244.5	7.0	12	3		
	3750	TYKW	5 S	2243.0	2244.8	10.0	5	1.5		
	2695	PENT	1 S	2310.5	2311	1.0	2.2	1.5		
27	245	LEAR	43 NS	0650.5	0810.8	243.5D	150			
	410	LEAR	43 NS	0656.5	0657.5	46.0	13			
	260	ONDR	44 NS	0925.0E		278.0D	64	3		
	245	SGMR	43 NS	1207.0	1952.0	578.0D	96			
	1000	TYKW	5 S	0117.6	0117.7	.7	16	2.5		
	9400	TYKW	5 S	0402.0	0403	10.0	4	2		
	3750	TYKW	5 S	0402.0	0403	4.0	1.5	.5		
	9400	TYKW	5 S	0532.0	0535	10.0	4	2		
	3750	TYKW	5 S	0533.0	0534.2	7.0	4	1		
	2800	TYKW	5 S	0552.0	0556.3	25.0	5	1		
	3750	TYKW	5 S	0553.0	0558	25.0	2	1		
	9400	TYKW	5 S	0554.0	0558	15.0	4	2		
	1000	TYKW	5 S	0556.0	0556.3	1.0	1	.3		
	410	LEAR	4 S/F	1009.6	1012.1	3.5	16			
	2800	OTTA	21 GRF	1534.0	1613	105.0	5.8			
	2800	OTTA	40 F	1534.3	1539.3	6.7	135.8			
	3200	BERN	45 C	1540.5	1544.8	11.0D	.0			ONLY PAPER REC
	5200	BERN	45 C	1540.5	1544.8	11.0D	193.0			ONLY PAPER REC
	4995	SGMR	4 S/F	1540.8	1544.6	8.8D	200			
	8800	SGMR	4 S/F	1541.0	1544.8	6.8D	250			
	2695	SGMR	4 S/F	1541.0	1544.8	9.3D	83			
	2800	OTTA	45 C	1541.2	1545	10.0	88.0	19.0		
	15400	SGMR	4 S/F	1541.6	1544.5	5.9	180			
	930	BORD	41 F	1544.3	1544.6	.9	240.0	5.0		
	2800	OTTA	240AR	1800.0	2020	140.0	9.6	4.8		
	2800	OTTA	1 S	1843.0	1843.4	1.0	5.8			
	245	PALE	4 S/F	1952.5	1952.8	6.1	77			
	2800	OTTA	8 S	1953.5	1953.5	.1	3.6			
	2695	PENT	20 GRF	2030.0	2055	85.0	3.2	1.6		
28	245	LEAR	43 NS	0222.0	0245.8	258.0	81			
	245	LEAR	4 S/F	0139.1	0139.1	41.8	30			
	410	LEAR	8 S	0139.1	0139.1	.2	190			
	1000	TYKW	47 GB	0158.0	0208.4	28.0	1400	30		
	245	PALE	47 GB	0158.5	0208.0	25.1	640			
	1415	LEAR	47 GB	0203.8	0208.1	10.5	460			
	2000	TYKW	45 C	0204.0	0214.0	26.0	28	6		
	8800	LEAR	4 S/F	0207.1	0214.3	21.9	42			
	1415	MANI	47 GB	0208.0	0208.5	16.0D	740			
	3750	TYKW	45 C	0208.0	0218.0	22.0	46	16		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JANUARY 1981

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
28	9400	TYKW	45	C	0208.0	0214.2	22.0	37	18		
	200	HIRA	27	RF	0210.0	0310	255.0	100.0	11.0		WL
	200	HIRA			0210.0	0214		60.0			WL
	606	MANI	4	S/CF	0210.5	0216.3	10.5D	41			
	500	HIRA	46	C	0211.0	0216.7	10.0	24.0	24.0		0
	17000	NOBE	20	GRF	0212.2	0221.4	44.0	13.0			0
	4995	MANI	4	S/CF	0212.3	0214.1	8.7D	46			
	2695	MANI	4	S/CF	0212.5	0218.0	8.5D	21			
	8800	MANI	4	S/CF	0213.0	0214.1	3.3	50			
	4995	LEAR	4	S/CF	0213.1	0214.1	6.5	41			
	245	LEAR	4	S/CF	0213.3	0213.5	8.2	180			
	2695	LEAR	8	S	0213.8	0214.0	.5	21			
	606	LEAR	4	S/CF	0214.3	0216.1	2.7	31			
	410	LEAR	4	S/CF	0214.3	0219.6	6.7	33			
	100	HIRA			0216.6	0239.3		110.0			0
	100	HIRA	27	RF	0216.6	0228.3	83.0	770.0	27.0		
	35000	NAGO	20	GRF	0217.0	0227	42.0	11.0			
	15400	LEAR	8	S	0217.5	0217.8	.1	17			
	1000	TYKW	30	PBI	0226.0		75.0	4	2.5		
	3750	TYKW	29	PBI	0230.0		90.0	10	5		
	9400	TYKW	29	PBI	0230.0		90.0	18	6		
	2000	TYKW	29	PBI	0230.0		90.0	3	1.5		
	1000	TYKW	5	S	0242.0	0243.1	3.0	3	1		
	1000	TYKW	45	C	0403.0	0403.2	1.5	5	.7		
	1000	TYKW	45	C	0405.0	0405.7	2.5	16	2		
	3750	TYKW	21	GRF	0410.0	0510	150.0	7	3.5		
	9400	TYKW	21	GRF	0410.0	0500	150.0	14	7		
	9400	TYKW	45	C	0410.0	0413.6	7.0	290	50		
	3750	TYKW	45	C	0410.0	0414.0	12.0	97	25		
	2000	TYKW	21	GRF	0410.0	0450	150.0	2	1		
	1415	MANI	47	GB	0411.0	0420.1	10.5D	11			
	4995	LEAR	4	S/CF	0411.1	0413.6	14.0	240			
	8800	LEAR	4	S/CF	0411.5	0413.6	6.6	360			
	17000	NOBE	7	C	0411.5	0411.9	1.1	105.0			R
	4995	MANI	47	GB	0411.5	0413.6	6.6D	250			
	8800	MANI	47	GB	0411.5	0413.6	5.1	390			
	15400	LEAR	4	S/CF	0411.8	0413.6	2.2	150			
	2000	TYKW	45	C	0412.0	0416.3	20.0	25	6		
	2695	MANI	47	GB	0412.5	0415.5	5.6D	42			
	17000	NOBE	7	C	0412.6	0413.6	2.8	134.0			0
	35000	NAGO	5	S	0413.0	0414	2.0	37.0			
	2695	LEAR	47	GB	0413.3	0416.0	4.3	36			
	17000	NOBE	29	PBI	0415.4	0415.5	22.0	24.0			0
	1000	TYKW	45	C	0416.0	0416.2	1.0	14	2		
	9400	TYKW	29	PBI	0417.0		20.0	18	8		
	606	MANI	47	GB	0418.5	0421.6	3.6D	16			
	1000	TYKW	45	C	0419.0	0420.2	3.0	11	2.5		
	410	LEAR	8	S	0419.6	0419.8	.5	119			
	3750	TYKW	29	PBI	0422.0		10.0	8	4		
	8800	LEAR	8	S	0831.8	0832.1	.8	20			
	9100	GORK	1	S	0832.0	0832.3	1.4	16.5	8.0		
	260	ONDR	42	SER	1006.5	1351.5	165.0	30			
	127	TORN	42	SER	1028.4	1031.7	4.5	30.0			
	650	GORK	46	C	1130.0	1133.4	5.2	9.0			
	650	GORK			1130.0	1134.5		17.0			
	650	GORK			1130.0	1135.0		34.0			
	127	TORN	40	F	1312.0	1313.0	14.5	30.0	1.0		
	2800	OTTA	21	GRF	1500.0	1615	480.0	29.0	14.5		
	9400	HUAN		S	1515.5	1600.7	217.8	37.8	14.5		L
	930	BORD	46	C	1518.0	1518.2	.6	30.0	4.0		
	5200	BERN	22	GRF	1533.0	1537.7	12.0	23.0			ONLY PAPER REC
	3200	BERN	22	GRF	1533.0	1551.8	21.0D	.0			ONLY PAPER REC
	9400	HUAN		S	1536.8	1537.8	1.8	19.7	9.8		L
	2800	OTTA	1	S	1537.2	1538	1.8	44	2.6		
	2800	OTTA	1	S	1544.0	1544.5	1.5	4.4	2.2		
	2800	OTTA	4	S/CF	1549.0	1552	16.0	38.0	16.0		
	8800	SGMR	4	S/CF	1550.0	1556.1	11.0D	41			
	4995	SGMR	4	S/CF	1550.0	1551.8	14.1D	23			
	2695	SGMR	4	S/CF	1550.0	1552.1	14.8D	43			
	1415	SGMR	4	S/CF	1551.0	1555.6	9.1D	70			
	15400	SGMR	4	S/CF	1551.3	1559.3	8.7D	10			
	245	SGMR	8	S	1554.0	1554.1	.1	51			
	9400	HUAN		S	1554.8	1556.0	2.2	14.8	7.7		0
	930	BORD	40	F	1555.0	1611.7	18.0	14.0	4.0		
	2800	OTTA	1	S	1608.0	1612	5.0	3.8	2.2		
	9400	HUAN		S	1945.3	1954.7	29.1	4.9	2.6		0
	9400	TYKW	20	GRF	2233.0	2240	30.0	8	3		
	3750	TYKW	20	GRF	2233.0	2240	30.0	3	1.5		
	410	LEAR	8	S	2327.5	2327.6	.3	60			
	245	LEAR	8	S	2327.5	2327.6	1.0	20			
29	245	LEAR	43	NS	0202.1	0324.1	372.9	85			
	200	HIRA	43	NS	0210.0	0221	180.0	6.0	2.0		0
	410	LEAR	43	NS	0240.5	0243.5	16.0	25			
	410	LEAR	43	NS	0550.0	0705.1	145.0	55			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JANUARY 1981

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
29	260	ONDR	44	NS	0840.0E		327.0D	26			
	200	GORK	43	NS	0933.0		147.0E		5.0		
	127	TORN	43	NS	0938.0	1048.5	332.0	90.0	3.0		VL
	200	HIRA	44	NS	2141.0E	0226	620.0D	15.0	5.0		WL
	245	LEAR	43	NS	2315.6	0307.8	697.4D	119			
	3750	TYKW	45	C	0024.0	0024.9	13.0	7	3.5		
	9400	TYKW	45	C	0024.0	0024.9	13.0	17	8		
	2000	TYKW	5	S	0024.3	0025.0	1.5	6	2		
	1000	TYKW	5	S	0024.6	0024.9	.6	9	4		
	4995	LEAR	8	S	0024.6	0024.8	.5	08			
	8800	LEAR	8	S	0024.6	0024.8	.4	20			
	2695	LEAR	8	S	0024.8	0024.8	.3	09			
	606	LEAR	8	S	0024.8	0024.8	.3	25			
	1415	LEAR	8	S	0024.8	0025.0	.3	119			
	8800	LEAR	4	S/F	0027.1	0029.3	7.7	20			
	15400	LEAR	4	S/F	0028.1	0030.0	6.4	19			
	9400	TYKW	29	PBI	0037.0		60.0	5	2.5		
	3750	TYKW	30	PBI	0037.0		60.0U	4	2 U		
	3750	TYKW	5	S	0040.0	0043.3	7.0	7	2		
	2000	TYKW	21	GRF	0220.0	0250	180.0	6	3		
	1000	TYKW	21	GRF	0220.0	0300	90.0	3	1.5		
	3750	TYKW	21	GRF	0220.0	0245	180.0	8	4		
	9400	TYKW	21	GRF	0225.0	0250	180.0	10	5		
	1415	PALE	4	S/F	0226.0	0233.0	28.0	480			
	1000	TYKW	47	GB	0226.5	0227.6	30.0	2100	80		
	1415	LEAR	8	S	0227.0	0227.1	.3	60			
	2000	TYKW	45	C	0230.0	0237.5	17.0	22	3		
	1415	LEAR	47	GB	0230.1	0232.6	14.7	440			
	3750	TYKW	21	GRF	0320.0	0326	40.0	3	1.5		
	1000	TYKW	5	S	0328.0	0328.3	1.0	3	1		
	3750	TYKW	5	S	0349.5	0350.2	2.5	2	.5		
	3750	TYKW	45	C	0408.5	0413	13.0	3	1		
	9400	TYKW	5	S	0409.0	0410	10.0	4	1.5		
	606	LEAR	47	GB	0409.1	0410.0	1.0	650			
	3750	TYKW	5	S	0458.0	0459	10.0	2	1		
	9400	TYKW	5	S	0458.0	0459	10.0	3	1.5		
	410	LEAR	4	S/F	0538.1	0540.1	4.0	11			
	113	POTS	4	S/F	0743.5	0748.0	15.0	700.0	10.0		III
	245	LEAR	4	S/F	0746.1	0747.6	2.7	94			
	234	POTS	8	S	0746.2	0746.3	.5	100.0	30.0		III
	113	POTS	4	S/F	0831.7	0832.3	1.8	100.0	10.0		III
	29	UPIC	42	SER	0832.1	1102.5U	179.4				
	29	UPIC	42	SER	0832.1	1102.5U	179.4				
	113	POTS	4	S/F	1032.7	1034.6	4.3	100.0	5.0		III
	113	POTS	4	S/F	1105.7	1106.7	4.4	175.0	15.0		III
	1470	POTS	1	S	1209.5	1209.7	1.0	3.2			
	9500	POTS	1	S	1209.5	1209.7	1.0	3.2			
	1470	POTS	1	S	1240.0	1242.0	3.0	3.2			
	3000	POTS	3	S	1240.5	1241.9	2.5	9.9			
	9500	POTS	1	S	1240.7	1241.5	2.3	6.4			
	9400	HUAN		S	1251.2	1251.8	1.6	12.8	7.8		0
	9500	POTS	3	S	1251.5	1251.8	1.5	11.0			
	9400	HUAN		S	1320.8	1330.8	17.3	4.8	2.6		0
	9400	HUAN		S	1342.8	1343.7	1.8	6.4	4.8		0
	1470	POTS	40	F	1343.0	1343.5	1.2	2.5			
	9500	POTS	1	S	1343.0	1343.4	1.5	9.6			
	245	SGMR	8	S	1346.0	1346.1	.6	91			
	1415	SGMR	8	S	1423.1	1423.5	.7D	07			
	930	BORD	3	S	1423.4	1423.6	.6	19.0	4.0		
	1470	POTS	8	S	1423.5	1423.6	.5	4.9			
	606	SGMR	8	S	1426.1	1426.3	.5D	28			
	410	SGMR	8	S	1426.1	1426.3	.5D	110			
	245	SGMR	8	S	1426.3	1426.6	.5	48			
	930	BORD	8	S	1426.5	1426.5	.1	14.0	1.0		
	606	SGMR	47	GB	1441.1	1445.0	5.4D	1199			
	930	BORD	42	SER	1441.5	1446.2	5.5	252.0	1.0		
	410	SGMR	4	S/F	1444.0	1446.1	2.3D	160			
	4995	SGMR	8	S	1445.0	1445.1	1.0D	13			
	2695	SGMR	8	S	1445.0	1445.1	.8D	15			
	1415	SGMR	8	S	1445.1	1446.1	2.0D	11			
	245	SGMR	47	GB	1445.3	1446.5	2.5	13999			
	5200	BERN	3	S	1445.8	1446.2	1.5	20.0			ONLY PAPER REC
	3200	BERN	3	S	1445.8	1446.2	1.5	.0			ONLY PAPER REC
	2800	OTTA	3	S	1446.0	1446.1	1.0	17.2	5.8		
	2650	DWIN	1	S	1446.0	1446.5	1.0	15.0	10.0		
	113	POTS	4	S/F	1446.8	1447.6	1.7	2400.0	600.0		III
	234	POTS	4	S/F	1447.5	1447.6	1.8	16000.0	4000.0		III
	930	BORD	41	F	1623.4	1623.7	.6	19.0	2.0		
	9400	HUAN		S	1832.4	1844.7	59.5	8.0	3.3		
	9400	HUAN		S	1840.1	1840.4	1.0	9.6	4.8		
	2800	OTTA	1	S	1917.7	1917.9	1.0	3.4	1.7		
	2695	PENT	20	GRF	2050.0	2100	50.0	2.8	1.6		
30	127	TORN	44	NS	0700.0E	1227.3	490.0D	30.0	4.8		VL
	260	ONDR	44	NS	0835.0E		345.0D	152			

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DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
30	200	GORK	43	NS	0912.0		168.0E		5.0		
	245	SGMR	43	NS	1205.0	1951.0	584.0D	310			
	410	SGMR	43	NS	1747.0	1957.1	242.0D	110			
	200	HIRA	44	NS	2140.0E	0407	620.0D	10.0	5.0		WL
	1000	TYKW	5	S	0010.0	0010.6	1.0	2	.5		
	2000	TYKW	5	S	0010.0	0010.6	1.5	1	.3		
	9400	TYKW	5	S	0010.0	0010.6	1.5	5	1		
	3750	TYKW	5	S	0010.0	0010.5	1.0	2.5	1		
	3750	TYKW	5	S	0018.6U	0019.3	1.5U	9 U	3 U		
	9400	TYKW	45	C	0116.0	0118.2	14.0	9	2		
	4995	LEAR	8	S	0119.1	0119.1	.2	13			
	9400	TYKW	29	PBI	0130.0		40.0	3	1		
	606	LEAR	8	S	0157.3	0157.5	.5	13			
	410	LEAR	8	S	0157.5	0157.6	.1	07			
	3750	TYKW	21	GRF	0310.0	0440	165.0	4	2		
	2000	TYKW	21	GRF	0310.0	0440	150.0	3	1.5		
	2000	TYKW	5	S	0315.0	0316	3.0	3	1		
	100	HIRA	46	C	0324.6	0325.5	1.6	720.0	140.0		WL
	410	LEAR	8	S	0325.5	0325.6	.1	22			
	245	LEAR	8	S	0325.5	0325.6	.3	18			
	3750	TYKW	45	C	0327.0	0332.3	20.0	4	2		
	9400	TYKW	45	C	0327.0	0328.0	15.0	9	2		
	2000	TYKW	5	S	0327.0	0330	25.0	2	1		
	1000	TYKW	45	C	0401.0	0401.8	2.0	7	1.5		
	2000	TYKW	45	C	0401.0	0401.6	20.0	3	1		
	1000	TYKW	5	S	0405.2	0405.4	.5	2	.5		
	100	HIRA	41	F	0450.3	0451.0	2.6	400.0			0
	245	LEAR	8	S	0452.1	0452.5	.7	27			
	3750	TYKW	45	C	0455.0	0505.3	45.0	5	2		
	2000	TYKW	20	GRF	0455.0	0505	40.0	1	.5		
	3750	TYKW			0455.0	0455.9		5			
	9400	TYKW	45	C	0455.0	0528.4	40.0	11	1.5		
	1000	TYKW	5	S	0549.5	0549.8	.6	2	.5		
	1000	TYKW	5	S	0641.7	0641.8	1.0	2	.5		
	9400	TYKW	5	S	0641.8	0642.2	1.0	5	1.5		
	3750	TYKW	5	S	0718.0	0719.5	10.0	4	1.5		
	2950	GORK	1	S	0752.5	0753.1	1.5	9.5			
	410	LEAR	8	S	0805.3	0805.3	.3	49			
	430	KRAK	42	SER	0848.8	0849.2	1.0	300			
	410	LEAR	8	S	0849.1	0849.6	.5	360			
	9100	GORK	1	S	0849.1	0849.8	1.2	6.0	3.0		
	245	LEAR	8	S	0857.8	0858.6	1.0	34			
	410	LEAR	8	S	0858.5	0858.6	.3	27			
	410	LEAR	8	S	0921.8	0922.0	.8	34			
	930	BORD	41	F	0929.6	0929.9	.4	20.0	2.0		
	536	ONDR	8	S	0934.5	0934.5	.2	62			
	410	LEAR	8	S	0944.5	0944.8	.3	31			
	5200	BERN	4	S/F	1036.0	1038.6	7.0	16.0			ONLY PAPER REC
	3200	BERN	2	S/F	1036.0	1038.6	6.0	.0			ONLY PAPER REC
	8400	BERN	3	S	1036.0	1038.6	6.0	22.0			ONLY PAPER REC
	2950	GORK	1	S	1037.5	1039.0	4.3	1.2			
	410	LEAR	8	S	1038.1	1038.8	1.9	30			
	9100	GORK	2	S/F	1038.4	1038.9	4.0	13.0			
	536	ONDR	4	S/F	1121.6	1122.3	1.5	78	8		
	9100	GORK	2	S/F	1121.7	1122.1	4.2	28.0			
	650	GORK	3	S	1121.7	1121.9	.6	47.0			
	2950	GORK	1	S	1121.8	1122.1	3.0	1.2			
	3000	POTS	1	S	1121.8	1122.0	.8	5.6			
	1470	POTS	1	S	1121.8	1122.1	1.2	3.2			
	950	GORK	1	S	1121.8	1122.1	.8	2.0	1.0		
	9500	POTS	29	PBI	1121.9	1122.1	6.1	21.0			
	10715	DWIN	1	S	1122.0	1122.5	1.0	30.0	15.0		
	5200	BERN	4	S/F	1245.3	1246.2	1.0	15.0			ONLY PAPER REC
	8400	BERN	3	S	1245.3	1246.2	1.0	35.0			ONLY PAPER REC
	9400	HUAN		S	1245.6	1246.3	1.9	16.6	7.6		0
	9500	POTS	3	S	1245.7	1246.0	1.3	18.0			
	10715	DWIN	2	S	1246.0	1246.5	1.0	20.0	10.0		
	3000	POTS	1	S	1246.2	1246.8	1.3	5.6			
	9400	HUAN		S	1253.7	1254.3	1.2	5.0	1.7		L
	9400	HUAN		S	1335.3	1356.0	39.0	8.3	2.1		0
	5200	BERN	4	S/F	1351.7	1352.7	5.0	20.0			ONLY PAPER REC
	3200	BERN	2	S/F	1351.7	1352.7	5.0	.0			ONLY PAPER REC
	3000	POTS	4	S/F	1352.0	1352.9	2.0	9.2			
	536	ONDR	42	SER	1352.0	1414.8	23.0	143			
	2800	OTTA	2	S/F	1352.0	1352.9	4.0	7.8	2.8		
	10715	DWIN	2	S/F	1352.0	1353	3.0	70.0	30.0		
	9400	HUAN		S	1352.1	1353.0	3.1	49.9	21.0		R
	9500	POTS	4	S/F	1352.2	1352.9	2.8	46.0			
	430	KRAK	42	SER	1352.3	1353.0	2.3	140			
	430	KRAK			1352.3	1354.5		90			
	930	BORD	41	F	1352.4	1352.4	.6	13.0	2.0		
	810	KRAK			1352.7	1354.5		6			
	1470	POTS	1	S	1352.7	1353.0	1.3	3.2			
	810	KRAK	42	SER	1352.7	1352.7	2.0	33			
	9400	HUAN		S	1358.7	1359.2	1.5	5.0	1.7		R

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DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
30	234	POTS	8	S	1407.4	1407.5	.2	360.0	120.0		
	930	BORD	42	SER	1411.2	1413.7	4.3	131.0	2.0		
	2800	OTTA	21	GRF	1600.0	1627	45.0	3.0	2.2		
	2800	OTTA	8	S	1623.0	1623.3	.6	5.6			
	2800	OTTA	2	S/F	1946.5	1947.5	2.0	5.2	2.8		
	8800	SGMR	8	S	2002.1	2002.3	1.0	190			
	245	SGMR	47	GB	2015.5	2016.5	1.3D	1000			
	9400	HUAN		F	2015.7	2016.4	9.1	20.0	6.6		R
	9400	HUAN			2015.7	2020.8		18.3			
	9400	HUAN			2015.7	2019.2		22.4			
	606	SGMR	4	S/F	2015.8	2020.6	5.3D	110			
	15400	PALE	4	S/F	2015.8	2016.1	5.5D	46			
	8800	PALE	4	S/F	2015.8	2016.1	5.5D	35			
	1415	SGMR	4	S/F	2015.8	2016.0	5.3D	18			
	8800	SGMR	8	S	2016.0	2016.1U	.1D	32.U			
	4995	SGMR	4	S/F	2016.0	2016.1	5.1D	87			
	2695	SGMR	4	S/F	2016.3	2016.3	5.0D	15			
	410	SGMR	4	S/F	2016.3	2020.6	4.8D	160			
	15400	SGMR	4	S/F	2016.6	2016.1	4.4	49			
	2800	OTTA	40	F	2017.0	2019.3	5.0	6.2			
	606	PALE	4	S/F	2018.5	2020.8	3.1D	84			
	410	PALE	4	S/F	2018.5	2019.3	3.5D	88			
	1415	PALE	4	S/F	2018.5	2016.1	2.8D	60			
	245	PALE	4	S/F	2018.5	2020.6	3.5	45			
	606	SGMR	8	S	2047.1	2047.3	1.7	38			
	410	SGMR	8	S	2047.1	2047.3	2.0D	240			
	2695	PENT	20	GRF	2050.0	2105	120.0	6.4	4.2		
	245	PALE	47	GB	2101.6	2101.8	2.7	610			
31	245	LEAR	43	NS	0146.0	0347.6	547.0D	63			
	200	GORK	44	NS	0556.0E		484.0D		5.0		
	260	ONDR	44	NS	0800.0E		353.0D	155			
	127	TORN	43	NS	0836.0	1001.8	404.0	170.0	4.2		V1
	200	HIRA	44	NS	2140.0E	0620	620.0D	20.0	5.0		WL
	245	LEAR	8	S	0002.0	0002.8	1.5	58			
	245	PALE	8	S	0002.1	0002.8	.9	92			
	3750	TYKW	20	GRF	0100.0	0110 U	70.0	3	1.5		
	9400	TYKW	21	GRF	0100.0	0120	45.0	3	1.5		
	9400	TYKW	5	S	0109.5	0110.0	1.5	3.5	1.5		
	245	LEAR	8	S	0240.1	0240.5	1.4	48			
	410	LEAR	8	S	0240.1	0241.0	1.2	18			
	606	LEAR	8	S	0350.8	0351.1	.8	11			
	410	LEAR	8	S	0351.0	0351.1	.6	390			
	410	LEAR	8	S	0426.1	0426.3	.9	17			
	245	LEAR	8	S	0426.3	0426.3	.7	480			
	650	GORK	22	GRF	0643.0	0709.0	48.5	7.0			
	410	LEAR	8	S	0650.6	0650.8	.5	11			
	410	LEAR	4	S/F	0700.8	0703.8	3.7	35			
	245	LEAR	8	S	0703.6	0703.8	.2	250			
	650	GORK	22	GRF	0826.0	0847.2	51.0	19.0			
	606	LEAR	4	S/F	0831.0	0847.3	28.8	32			
	3200	BERN	20	GRF	0833.3	0837.3	46.0	.0			ONLY PAPER REC
	5200	BERN	20	GRF	0833.3	0837.3	46.0	12.0			ONLY PAPER REC
	2950	GORK			0836.7	0841.0		2.0			
	2950	GORK	41	F	0836.7	0837.4	5.6	4.0			
	950	GORK	20	GRF	0840.4	0847.1	10.0	6.0	3.0		
	100	GORK			0841.2	0850.4		230.0D			
	100	GORK			0841.2	0845.8		230.0			
	100	GORK	45	C	0841.2	0844.2	14.0	230.0			
	100	GORK			0841.2	0845.1		230.0D			
	810	KRAK	40	F	0846.0	0847.3	2.5	7	3		
	410	LEAR	4	S/F	0854.1	0856.8	4.7	21			
	245	LEAR	47	GB	0904.6	0904.8	1.2	780			
	9500	POTS	1	S	0905.5	0905.5	1.5	6.5			
	9100	GORK	1	S	1002.3	1003.3	1.0	6.0	3.0		
	410	LEAR	8	S	1002.8	1002.8	.2	220			
	650	GORK	23	GRF	1009.7	1029.5	97.0	13.0			
	200	GORK			1012.5	1038.4		60.0D			
	200	GORK	41	F	1012.5	1012.9	35.5	60.0D			
	234	POTS	8	S	1012.6	1012.6	.1	100.0	30.0		
	536	ONDR	42	SER	1017.0	1029	76.0	32			
	3200	BERN	2	S/F	1028.2	1030.5	7.0	.0			ONLY PAPER REC
	5200	BERN	4	S/F	1028.2	1030.5	7.0	23.0			ONLY PAPER REC
	9100	GORK	1	S	1028.5	1030.6	7.5	28.0			
	2950	GORK	1	S	1029.4	1030.6	4.4	11.5			
	1470	POTS	1	S	1029.5	1030.8	2.0	2.5			
	3000	POTS	3	S	1029.5	1030.7	4.0	11.0			
	9500	POTS	3	S	1030.0	1030.7	4.0	15.0			
	234	POTS	4	S/F	1038.2	1038.3	1.1	750.0	200.0		
	245	LEAR	47	GB	1038.3	1038.3	.3	1900			
	808	ONDR	2	S/F	1124.5	1125.6	3.0	25	12		
	8400	BERN	4	S/F	1132.0	1134.8	12.0	49.0			ONLY PAPER REC
	11800	BERN	4	S/F	1132.0	1134.8	9.0	85.0			ONLY PAPER REC
	5200	BERN	4	S/F	1132.0	1134.8	12.0	28.0			ONLY PAPER REC
	3200	BERN	4	S/F	1132.0	1134.8	12.0	.0			ONLY PAPER REC

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JANUARY 1981

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
31	19600	BERN	3	S	1132.0	1134.8	8.0	92.0			ONLY PAPER REC
	2695	ATHN	4	S/F	1132.1	1134.6	6.5D	20			
	234	POTS	42	SER	1132.4	1134.7	6.3	750.0	20.0		III
	4995	ATHN	4	S/F	1132.5	1134.8	7.5D	30			
	9100	GORK	46	C	1132.5	1134.6	9.3	55.0			
	9100	GORK			1132.5	1135.0		43.0			
	430	KRAK			1132.5	1141.3		100			
	950	GORK	4	S/F	1132.5	1134.9	5.3	25.0			
	930	BORD	46	C	1132.5	1135.0	4.5	86.0	5.0		
	430	KRAK	42	SER	1132.5	1133.0	9.0	150			
	430	KRAK			1132.5	1135.0		200			
	8800	ATHN	4	S/F	1132.6	1134.6	10.4	61			
	3000	POTS	4	S/F	1134.0	1134.8	4.0	18.0			
	9400	HUAN		F	1134.0	1134.7	1.6	47.4	20.6		R
	2650	DWIN	2	S/F	1134.0	1135	2.0	25.0	10.0		
	9500	POTS	4	S/F	1134.0	1134.5	6.0	50.0			
	9400	HUAN			1134.0	1134.9		40.8			
	10715	DWIN	2	S/F	1134.0	1134.5	1.0	60.0	30.0		
	1470	POTS	4	S/F	1134.0	1134.9	3.5	40.0			
	650	GORK	4	S/F	1134.1	1134.5	1.1	18.0			
	1415	ATHN	8	S	1134.1	1134.6	1.7D	41			
	2950	GORK	1	S	1134.2	1134.6	2.2	16.0			
	200	GORK	8	S	1134.4	1134.8	.8	60.0D			
	810	KRAK	4	S/F	1135.0	1136.0	2.2	52	8		
	100	GORK	8	S	1142.4	1142.7	.6	180.0			
	9400	HUAN		S	1208.0	1240.5	51.8D	11.4	6.7		0
	3200	BERN	21	GRF	1237.0	1238.6	60.0	.0			ONLY PAPER REC
	5200	BERN	21	GRF	1237.0	1238.6	60.0	21.0			ONLY PAPER REC
	3000	POTS	3	S	1238.0	1239.0	2.0	14.0			
	9400	HUAN		S	1238.1	1238.7	1.3	8.2	4.6		R
	2695	ATHN	4	S/F	1238.1	1238.8	12.0D	08			
	4995	ATHN	4	S/F	1238.1	1238.6	10.7D	19			
	8800	ATHN	4	S/F	1238.3	1238.6	10.3	13			
	9500	POTS	1	S	1238.5	1238.7	1.0	4.8			
	606	SGMR	8	S	1328.6	1329.0	.7D	67			
	245	SGMR	47	GB	1328.8	1329.1	.5	1199			
	410	SGMR	8	S	1328.8	1329.0	.5D	95			
	930	BORD	41	F	1453.8	1454.0	1.0	30.0	2.0		
	2800	OTTA	8	S	1458.9	1459	.5	3.0	1.5		
	930	BORD	41	F	1615.2	1615.3	.2	46.0	2.0		
	930	BORD	41	F	1621.0	1621.1	.2	14.0	2.0		
	2800	OTTA	1	S	1732.9	1733.3	1.0	3.0	1.5		
	2800	OTTA	20	GRF	1800.0	1805	25.0	3.4	1.8		
	606	SGMR	8	S	1828.6	1829.0	.7D	67			
	410	SGMR	8	S	1828.8	1829.0	.5D	95			
	245	SGMR	47	GB	1828.8	1829.1	.5	1199			
	2800	OTTA	8	S	1903.0	1903.2	.7	4.4	2.2		
	606	PALE	8	S	1929.8	1930.0	.3D	74			
	410	PALE	8	S	1932.5	1933.5	1.3	410			
	410	SGMR	8	S	1932.6	1933.8	1.4D	290			
	9400	HUAN		S	1932.6	1933.6	2.4	14.7	6.8		0
	4995	SGMR	4	S/F	1932.8	1933.3	2.2D	31			
	2800	OTTA	3	S	1933.0	1933.5	2.0	12.0	4.0		
	4995	PALE	8	S	1933.0	1933.3	.8D	36			
	8800	PALE	8	S	1933.1	1933.5	.9D	31			
	2695	PALE	8	S	1933.1	1933.3	1.5D	18			
	606	SGMR	8	S	1933.1	1933.3	1.0D	27			
	1415	SGMR	8	S	1933.1	1933.5	1.4D	06			
	8800	SGMR	8	S	1933.1	1933.3	.7	20			
	2695	SGMR	4	S/F	1933.1	1933.5	2.9D	11			
	245	SGMR	47	GB	1933.3	1933.8	1.0D	540			
	2800	OTTA	21	GRF	1955.0	2005	50.0	5.0	2.5		
	606	SGMR	4	S/F	2004.1	2005.3	2.2D	13			
	2695	SGMR	4	S/F	2004.5	2005.1	3.3D	11			
	2695	PENT	8	S	2005.0	2005.3	.5	7.6	3.8		
	245	SGMR	4	S/F	2005.6	2006.1	2.2D	170			
	4995	SGMR	4	S/F	2008.6	2009.3	3.2D	11			
	8800	SGMR	8	S	2009.1	2009.3	1.2	13			
	2695	PENT	8	S	2009.3	2009.5	.5	3.8	1.9		
	4995	SGMR	4	S/F	2040.5	2042.0	2.6D	06			
	1415	SGMR	8	S	2041.1	2041.6	1.2D	21			
	606	SGMR	8	S	2041.3	2041.6	1.5D	56			
	410	SGMR	8	S	2041.3	2042.0	1.2D	119			
	245	SGMR	47	GB	2041.6	2042.0	1.4	1199			
	8800	SGMR	8	S	2041.6	2042.0	2.0D	11			
	2695	SGMR	4	S/F	2041.6	2042.0	2.5D	07			
	2800	OTTA	1	S	2041.8	2042	1.0	8.8	2.8		
	2695	PENT	1	S	2204.0	2204.3	2.0	6.8	3.4		
	2695	PALE	4	S/F	2357.3	2359.5	10.0	43			
	2000	TYKW	5	S	2358.0	2359.6	6.0	17	5		
	3750	TYKW	45	C	2358.0	2359.6	10.0	37	9	D	
	4995	PALE	4	S/F	2358.1	2359.8	4.0D	22			
	8800	PALE	4	S/F	2358.3	2359.3	3.7D	24			
	2695	LEAR	8	S	2358.5	2359.5	1.3	41			
	4995	LEAR	8	S	2358.8	2359.8	1.0	27			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JANUARY 1981

DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
31	8800	LEAR	8 S	2358.8	2359.5	.8	22			
	9400	TYKW	45 C	2359.0	2359.6	9.0	16	8	D	RAIN

Reports are received routinely from the following observatories:

ABST = Abastumania
ATHN = Athens
BERN = Berne
BORD = Bordeaux
CRIM = Crimea
DWIN = Dwingeloo
GORK = Gorky
HARS = Harestua
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
IZMI = Izmiran
KISV = Kislovodsk
KRAK = Krakow
LEAR = Learmonth
MANI = Manila
NAGO = Nagoya
NOBE = Nobeyama
ONDR = Ondrejov
OTTA = Ottawa
PALE = Palehua
PENT = Penticton
POTS = Potsdam
SAOP = Sao Paulo
SGMR = Sagamore Hill
SYDN = Sydney
TORN = Torun
TYKW = Toyokawa
TRST = Trieste
UPIC = Upice
VORD = Voroshilov

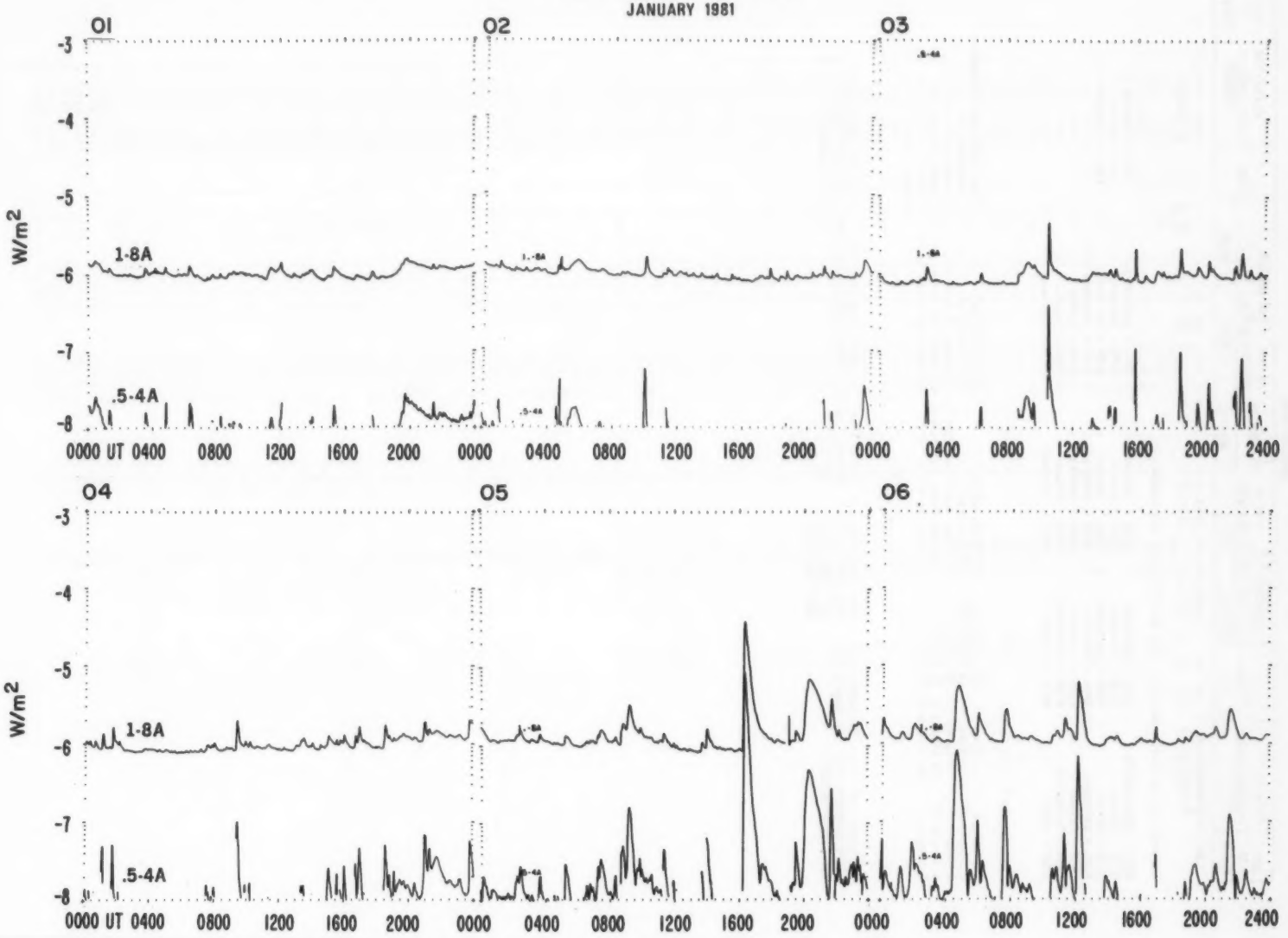
Explanation of Type Code:

1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
32 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset of Noise Storm
44 Noise Storm in Progress
45 Complex
46 Complex F
47 Great Burst
48 Major
49 Major +

1A Simple 1A
2A Simple 1AF
3A Simple 2A
4A Simple 2AF
21A Simple 3A GRF
240 Rise only
240F Rise only F
24P Post Rise
24PF Post Rise F
26A Fall A
260 Fall Only
26F Fall F
27F Rise and Fall F
27AF Rise and Fall AF
31A P.B. Decrease A
32A Absorption A
46F Complex F

SMS-GOES X-RAYS

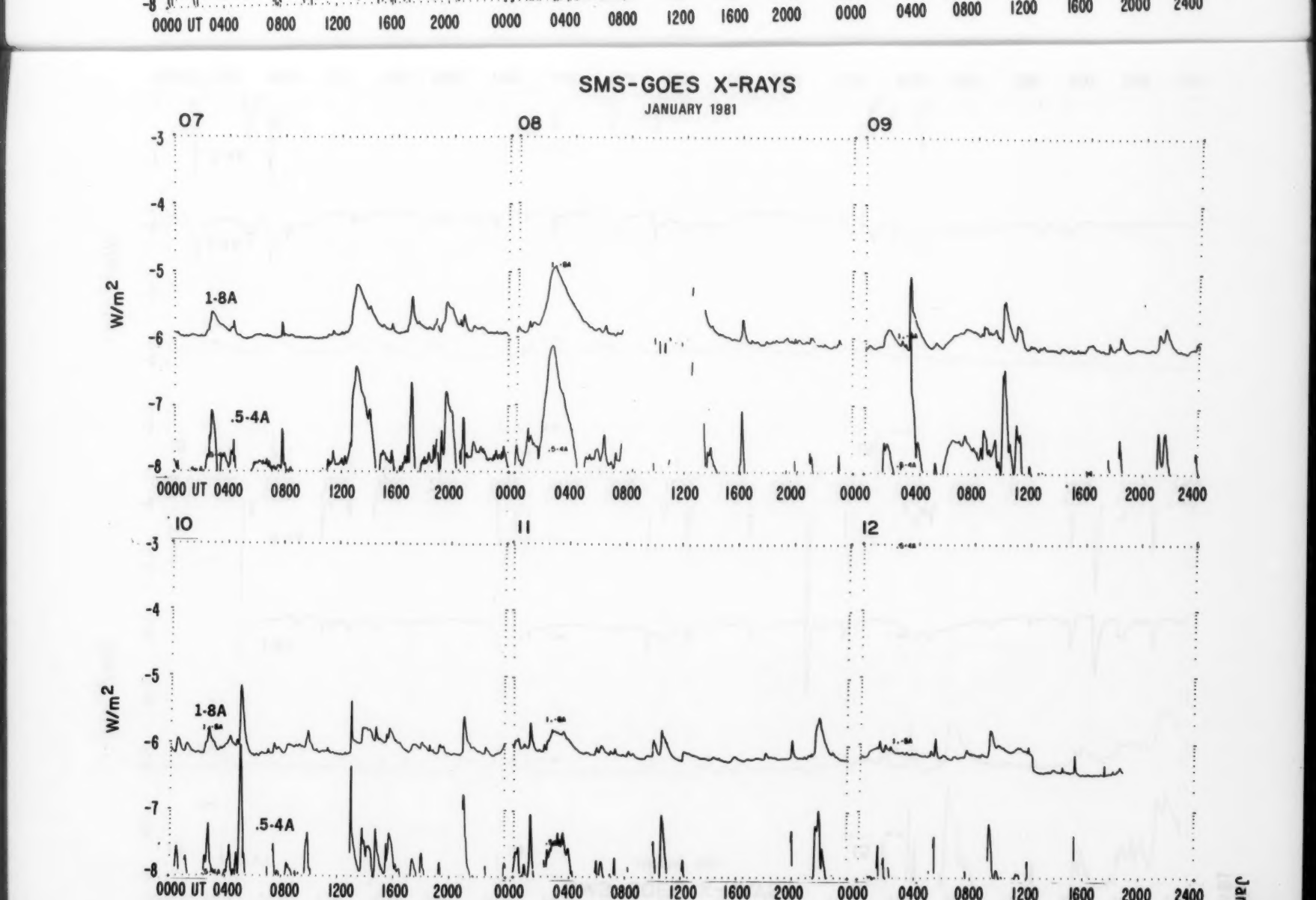
JANUARY 1981

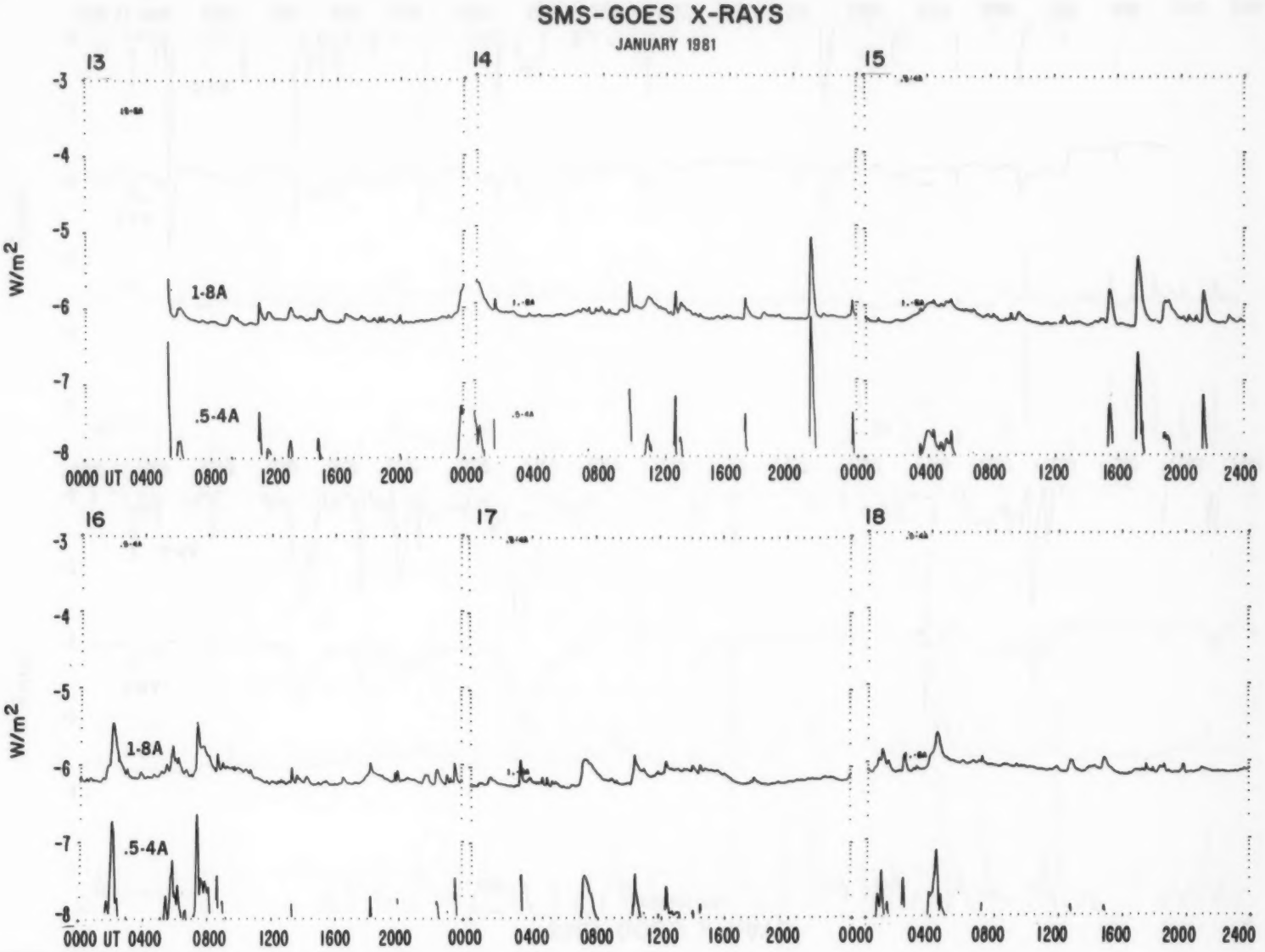


SMS-GOES X-RAYS

JANUARY 1981

07


SMS-GOES X-RAYS
JANUARY 1981
07
08
09
10
11
12
W/m2
-3
-4
-5
-6
-7
-8
1-8A
.5-4A
0000 UT 0400 0800 1200 1600 2000 0000 0400 0800 1200 1600 2000 0000 0400 0800 1200 1600 2000 2400
21 Jan 81



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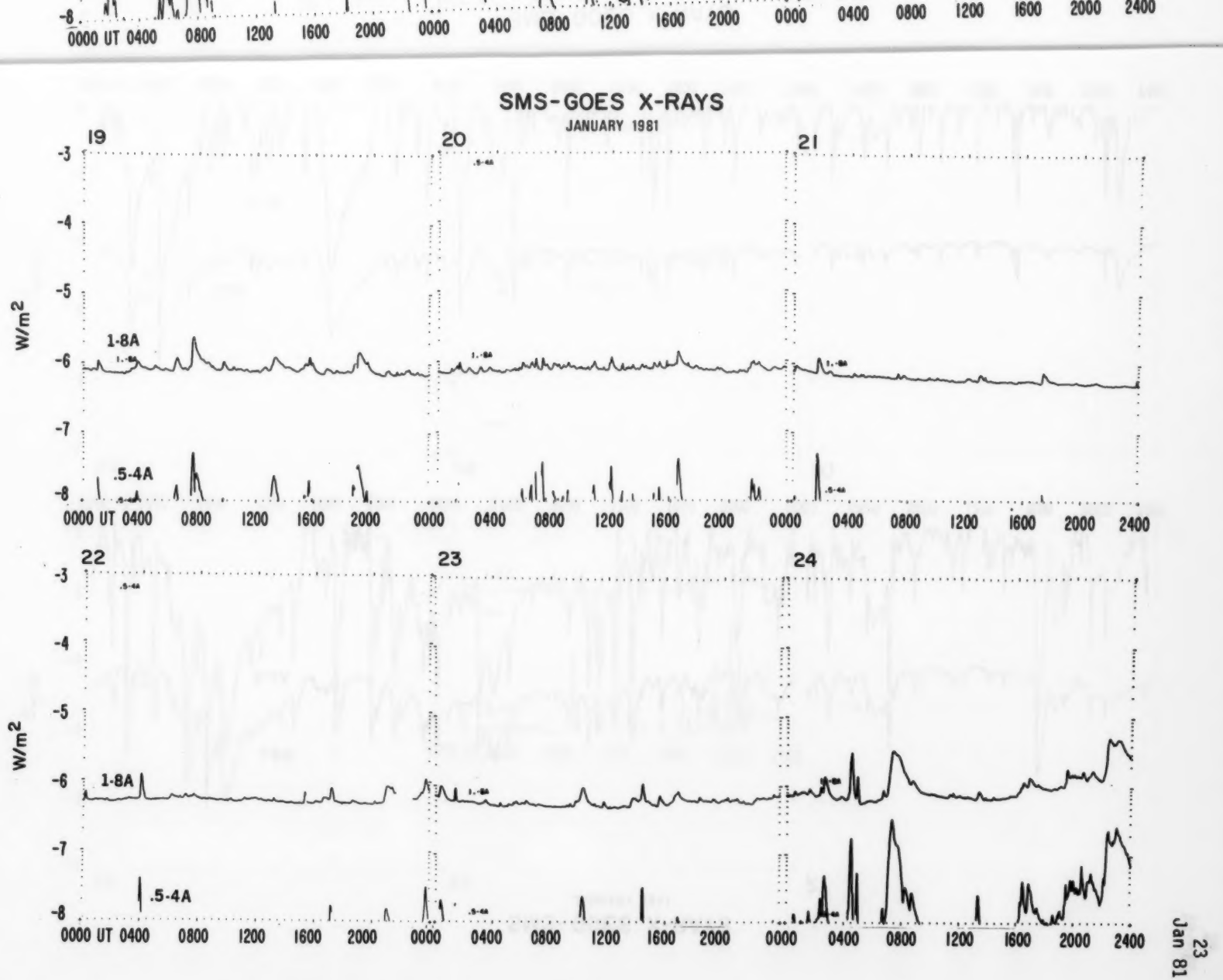
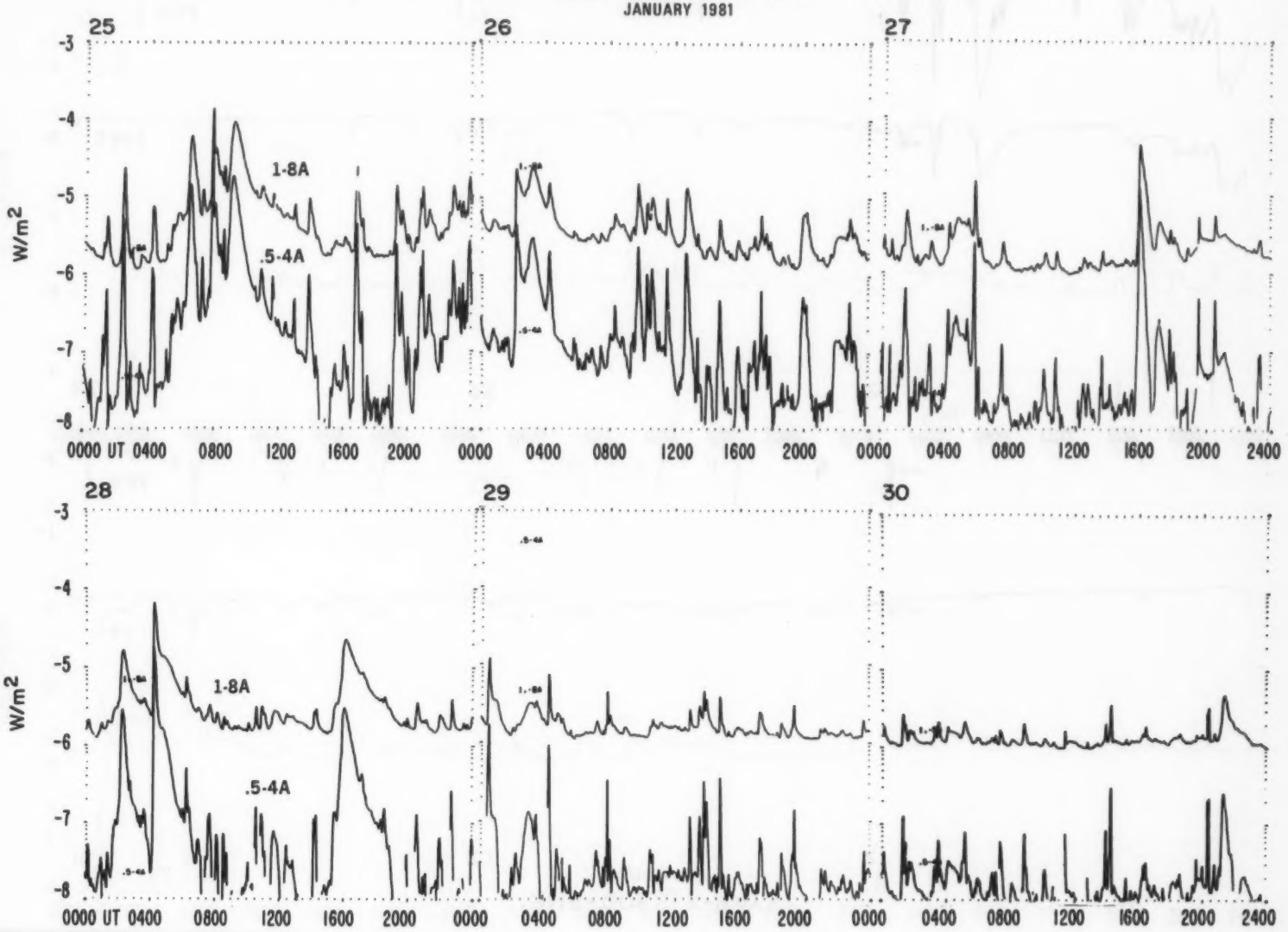
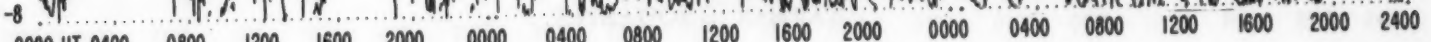

SMS-GOES X-RAYS
JANUARY 1981
19
20
21
22
23
24
W/m2
-3
-4
-5
-6
-7
-8
1-8A
.5-4A
0000 UT 0400 0800 1200 1600 2000 0000 0400 0800 1200 1600 2000 0000 0400 0800 1200 1600 2000 2400
23 Jan 81

SMS-GOES X-RAYS

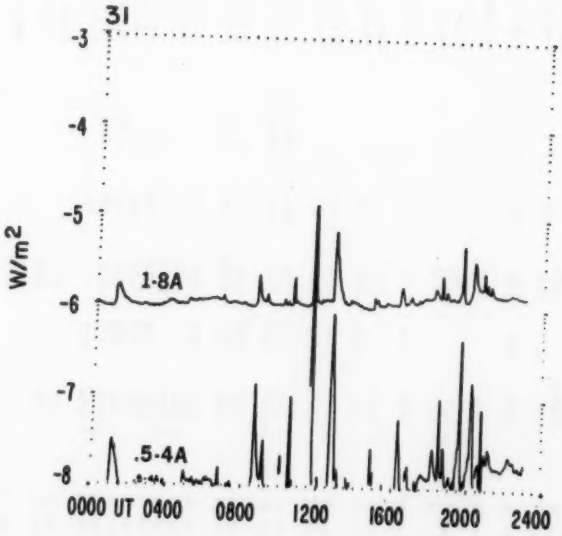
JANUARY 1981





SMS-GOES X-RAYS

JANUARY 1981



MASS EJECTIONS FROM THE SUN

JANUARY 1981

Station	Date 1981	Observed UT Start	Max	End	Location RA°	R/R_0	Wavelength	Type Event
HALE	Jan 03	1756	1941	2026	292	1.22	H-alpha	A
WEIS	Jan 04	1032.9		1049.5			50-80	II
BIGB	Jan 04	1654	1714	1845	276-282	1	H-alpha	A
BIGB	Jan 04	2056	2104	2130	262	1	H-alpha	
WEIS	Jan 05	0845.5		0851.1			Meter	II
LEAR	Jan 05	0848.9		0906.5			Meter	II
HARV	Jan 05	1618		1633			Decimeter; meter	IV
HARV	Jan 05	1619		1643			Meter	II
BIGB	Jan 05	1623	1645	1712	277	1	H-alpha	
BIGB	Jan 05	2134	2140	2206	270	1	H-alpha	
CULG	Jan 06	0428		0433			Meter	Possible II, Weak
CULG	Jan 06	0452.5		0517.5			Meter	II
HALE	Jan 06	2057	2242	0032D	076	1.20	H-alpha	A
DWIN	Jan 07	1241.5		1244.0			Decimeter	IV
DWIN	Jan 08	1223.6		1232.5			Decimeter	IV
KHAR	Jan 12	0952	0952	1000	105	1.00-1.05	H-alpha	S
KHAR	Jan 12	0952	0952	1000	107	1.00-1.05	H-alpha	S
BIGB	Jan 14	1550	1552	1601	261	1	H-alpha	
SGMR	Jan 14	2059		2102.5			Meter	IV
CULG	Jan 14	2109.5		2123			Meter	II
BIGB	Jan 14	2213	2216	2230	074	1	H-alpha	
BIGB	Jan 15	1820	1847	1902	072	1	H-alpha	
DWIN	Jan 16	0831		0839			Decimeter	IV
CULG	Jan 17	2223		2233			Meter	II
HARV	Jan 17	2223		2232			Meter	II
BIGB	Jan 18	1809	1814	1841	103-106	1	H-alpha	
LEAR	Jan 19	0749.3		0753.6			Meter	II
BIGB	Jan 19	2238	2246	2300	090	1	H-alpha	
BIGB	Jan 20	1617	1630	1658	114-117	1	H-alpha	
BIGB	Jan 20	1837	1908	1930	103	1	H-alpha	
WEND	Jan 22	1215	1247	1316	066	0.99-1.03	H-alpha	S?
WEND	Jan 22	1215	1303	1316	066	0.99-1.03	H-alpha	S?
BIGB	Jan 24	1706	1708	1715	097	1	H-alpha	
HALE	Jan 24	2255	2310	0055D	099	1.06	H-alpha	A
HALE	Jan 25	0115	0130	0145	099		H-alpha	A
DWIN	Jan 25	0848		0925			Decimeter	IV
WEIS	Jan 25	0856.1		0916.2			35-160	II Harmonic
BIGB	Jan 25	1643	1708	1718	094	1	H-alpha	SP
BIGB	Jan 25	1815	1818	1828	097	1	H-alpha	SP
HALE	Jan 25	1926	2016	2134	095	1.59	H-alpha	SP
HALE	Jan 25	1926	2118	2134	095	1.59	H-alpha	SP
BIGB	Jan 25	1956	2001	2011	095	1	H-alpha	SP
CULG	Jan 26	0301		0327			Meter	Possible II, Weak
CULG	Jan 26	0305		0315			Meter	IV Weak
DWIN	Jan 28	1133		1135			Decimeter	IV Zebra patterns
WEND	Jan 29	1202	1246	1318	103	1.00-1.28	H-alpha	Q
HALE	Jan 31	1842	1957	2042	282		H-alpha	S

QUALIFIERS ON START, MAX AND END TIMES
D = event ended after the tabulated time
E = event began before the tabulated time
U = uncertain time

TYPE OF EVENT
A = eruptive active region prominence
CB = coronal cloud bubble
D = coronal depletions
E = coronal enhancement
EL = coronal expanding loop
II = Type II radio burst
IVm = moving Type IV radio burst
Q = eruptive quiescent prominence
R = coronal ray or streamer
S = flare-surge if there is aknown flare association
SP = flare-spray if there is a known flare association
* = movement may be caused by ionospheric refraction

REPORTING STATIONS
BIGB = Big Bear
BLEN = Bleien
CULG = Culgoora
DWIN = Dwingeloo
GEOR = Georgiana
HALE = Haleakala
HAOC = High Altitude Observatory's SMM Coronagraph/Polarimeter
HAOK = High Altitude Observatory's MARK-III Coronameter at Mauna Loa
HARV = Harvard (Fort Davis)
KHAR = Kharkov
LEAR = Learmonth
MANI = Manila
MITK = Mitaka
NRLC = Naval Research Laboratory's White-Light Coronagraph Experiment on P78-1
PALE = Palehua
SGMR = Sagamore Hill
TELV = Tel Aviv
WEIS = Weissenau
WEND = Wendelstein
UDAI = Udaipur

NOTE: Because only a small fraction of the data taken by satellite-borne coronagraph had been analyzed at the time this table was assembled, many events are defined solely by ground-based observatory reports.

SGD 443 Part II (Comprehensive)

DECEMBER 1979 DATA

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Hα SOLAR FLARES

DECEMBER 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR. AREA Sq. Deg.		
154 CULG	J1	JJ1J	JJ15	JJ55U	N11	W40	.656	16450	28.0	450	-F		C	0015	50	.7		ZX
155 CULG	01	0018	0023	0035	N20	E53	.872	16466	5.4	17	-F		C	0023	60	1.2		ZX
156 VORO	01	0229	0230	0234	S25	E58	.881	16455	5.5	5	?F		C	0230	108	2.1	EJ	ZX
	IMP.1 NO : PURP MITK																	
157 ATHN	01	0719E	0720	0800	S13	E67	.326	16467	6.3	41D	-B	3	V	0720	33	.8		ZX
GRP80158	01	0830>9	0838 0858+2	0920	S23	E51	.820	16455	5.2	50	-F							
HTPR	01	0830	0838	0850	S27	E51	.833	16465	5.2	20	-F		C	0838	20	.3		
ISTA	01	0845		0915	S23	E51	.820	16465	5.2	30	-F						D	
HTPR	01	0848	0858	0925	S23	E51	.82J	16465	5.2	37	-F		C	0858	40	.6	E	
CATA	01	0855	0900	0920	S21	E52	.822	16465	5.3	25	1N	2	C	0900	112	2.0		
159 ISTA	01	0855		0910	S28	E30	1.000	16476	8.1	15	-F	*					D	ZX
GRP80160	01	0915>9	0932+3	095J	S24	E9J	1.JJJ	16476	8.1	35	1N						AE	
HTPR	01	0915	0933	0950	S22	E90	1.000	16476	8.1	35	-N		C	0933	20		E	
CATA	01	0925	0935	0955	S24	E30	1.000	16476	8.1	30	2N	2	C	0935	140		A	
KANZ	01	0929	0932	0943	S25	E85	.397	16476	7.8	14	-N	2						
GRP8J161	J1	1042+3	1J5J+J	1135	N12	W16	.332	16452	30.2	23	-N						E	
HTPR	01	1042	1050	1105	N12	W16	.332	16452	30.2	23	-F		C	1050	50	.5	E	
CATA	01	1045	1050	1105	N13	W16	.341	16452	30.2	20	1N	2	C	1050	137	2.2		
162 CATA	01	1150	1205	1225	S24	E90	1.000	16476	8.2	35	?F	2	C	1235	84			ZX
	IMP.1 NO : HTPR RAMY																	
163 HTPR	01	1358	1401	1407	N13	W60	.878	16448	27.1	9	-N		C	1401	30	.6		ZX
GRP80164	01	1414+1	1417+1	1423	S15	E64	.908	16457	6.4	9	-F				20	.5	D	
HUAN	01	1414	1417	1421	S15	E65	.915	16467	6.5	7	-N	1	C	1417	20		D	
HTPR	01	1415	1418	1425	S16	E64	.909	16467	6.4	10	-F		C	1418	20	.4		
165 HTPR	01	1425	1428	1445	S21	E36	.662	16453	4.3	20	-F		C	1428	20	.2		ZX
166 BIGB	J1	1516	1521	1537	N31	E20	.581	16475	3.1	21	-N		C	1521	60	.6	G	ZX
167 BIGB	01	1758	1800	1817	N31	E20	.581	16475	3.2	19	-N		C	1800	50	.5	G	ZX
168 BIGB	01	1824	1830	1857	N31	E2J	.581	16475	3.3	33	-N		C	1830	40	.4	G	ZX
169 BIGB	01	1935	1940	1947	S23	E85	.997	16476	8.2	12	-N		C	1940	50			ZX
170 CULG	01	2018	2022	2040	S16	E60	.873	16467	6.3	22	-F		C	2022	30	.6		ZX
GRP8J171	J1	2037	2039+0	2057	S18	E20	.459	16458	3.4	20	-N							
BIGB	01	2037	2039	2057	S19	E20	.459	16458	3.4	20	-N		C	2039	30	.3		
CULG	01	2033E	2033U	2041D	S18	E20	.453	16458	3.4	20	-N		P	2039	80	.3		
172 BIGB	01	2212	2219	2336	N27	E25	.583	16461	3.8	54	-N		C	2219	30	.3	G	ZX
173 BIGB	01	2229	2233	2245	N11	W05	.195	16463	1.6	16	-N		C	2233	30	.3	G	ZX
174 CULG	01	2243	2243	2302	S18	E56	.850	16457	6.1	19	-F		C	2249	60	1.1		ZX
175 CULG	01	2341	2346	2357	S18	E18	.437	16458	3.3	16	-F		C	2346	60	.7		ZX
176 CULG	01	2343	2400	0011	S15	E07	.238	16456	2.5	22	-F		C	2400	30	.3		ZX
177 VORO	02	0324	0326	0332	S17	E17	.414	16458	3.4	8	-B		C	0326	90	1.0	D	ZX
178 WEND	02	1052		1104	S20	E15	.430	16458	3.6	12	-N		C	1054	60	.7	D	ZX
GRP80179	02	1256+4	1303	1346	S25	E71	.357	16476	7.9	50	-F							
WEND	02	1256		1355D	S24	E70	.952	16476	7.8	590	-N		C	1310	62			
KANZ	02	1300	1309	1337	S26	E73	.966	16476	8.0	37	-F	2						
180 KANZ	02	1312	1316	1325	N13	W32	.553	16452	30.2	13	-F	2					G	ZX
181 WEND	J2	1345		1355D	S25	E39	.716	16465	5.5	100	-F		C	1351	50	.7	E	ZX
182 HUAN	02	1701E		1708D	S25	E35	.676	16465	5.3	70	-F	1	P	1701	50	.7	E	ZX
183 HUAN	02	1858		1302	S22	E68	.940	16476	7.9	4	-F	1	C	1900	40			ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
184 BIGB	02	1907	1909	1939	S28	E90	1.000	16478	9.5	32	-N		C	1909	100			ZX
185 BIGB	02	1939	1941	1953	S11	E90	1.000	16478	9.6	14	-N		C	1941	50			ZX
186 CULG	02	2141	2152	2206	S13	E07	.266	16458	3.4	25	-N		C	2152	60	.6		ZX
187 CULG	02	2224	2230	2237	S13	E46	.739	16467	6.4	13	-F		C	2230	40	.6		ZX
188 CULG	02	2238	2243	2304	S08	E72	.953	16479	8.3	26	-F		C	2243	30			ZX
GRP80189	02	2343+9	2352+4	0008	S20	E09	.384	16458	3.7	25	-F				60	.6	D	
CULG	02	2343	2356	0013	S21	E10	.405	16458	3.7	30	-F		C	2356	80	.9		
VORO	02	2352	2352	0002	S20	E09	.384	16458	3.7	10	-F		C	2352	54	.6	D	
GRP80190	03	0102	0111+5	0124	S24	E32	.638	16465	5.4	22	-N						EJL	
VORO	03	0102	0111	0124	S23	E33	.641	16465	5.5	22	-N		C	0111	81	1.1	EJL	
YUNN	03	0115E	0116	0116D	S26	E32	.653	16465	5.5	1D	-N		C		32	.4		
191 VORO	03	0213	0214	0221	S24	E31	.628	16465	5.4	8	-N		C	0214	99	1.3	E	ZX
192 CULG	03	0249	0253	0306	S19	W28	.556	16455	1.0	17	-F		C	0253	30	.3		ZX
GRP80193	03	0308+1	0310+1	0322	S25	E29	.616	16465	5.3	14	-F						E	
YUNN	03	0308	0311	0320	S27	E30	.642	16465	5.4	12	-F		C		32	.4		
VORO	03	0309	0310	0323D	S24	E29	.607	16465	5.3	14D	-N		C	0310	90	1.2	E	
GRP80194	03	0311+1	0312 0324	0325	S18	E03	.324	16458	3.4	14	-F						D	
YUNN	03	0311	0324	0336	S18	E02	.321	16458	3.3	25	-F		C		16	.2		
VORO	03	0312	0312	0313	S18	E04	.327	16458	3.4	1	-N		C	0312	36	.4	D	
195 CULG	03 IMP.1	0402 NO : MITK	0410	0434U YUNN	S20	E44	.741	16467	6.5	32D	?F		C	0410	140	2.2	L	ZX
196 YUNN	03	0605	0625	0730	S27	E28	.624	16465	5.4	55	-N		C		32	.4		ZX
197 YUNN	03	0705	0710	0721	S27	E28	.624	16465	5.4	16	-N		C		32	.4		ZX
198 WEND	03	1035	1037	1044	S25	E25	.577	16465	5.3	9	-F		C	1037	28	.3	D	ZX
GRP80199	03	1103+3	1109+6	1122	S26	E24	.578	16465	5.3	19	-F						D	
LVOV	03	1103	1109	1113	S28	E24	.598	16465	5.3	10	-F		C	1103	100	1.3	D	
WEND	03	1106	1115	1130	S25	E25	.577	16465	5.3	24	-N		C	1115	38	.5	D	
200 WEND	03	1136	1143	1148	S22	E20	.498	16465	5.3	12	-F		C	1140	18	.2		ZX
201 KANZ	03	1336	1337	1346	N22	E36	.657	16477	6.3	10	-F	1						ZX
202 HUAN	03	1435		1440	S16	W05	.298	16458	3.2	5	-F	1	C					ZX
203 BIGB	03 IMP.2	1514E NO : RAMY	1514U	1640 HOLL	S24	E54	.847	16476	7.7	86D	?B		P	1514	380	6.7		ZX
204 HOLL	03	1755	1755	1802	S16	W04	.294	16458	3.4	7	-F	3	C		23			ZX
205 BIGB	03	1804	1810	1815	N03	E90	1.000		0 10.5	11	-N		C	1810	30			ZX
206 HOLL	03	1848	1853	1901	S12	W61	.882	16453	29.2	13	-F	3	C		19			ZX
GRP80207	03	2022+5	2032	2044	S15	W05	.283	16458	3.5	22	-N				30	.3	D	
HUAN	03	2022		2040	S15	W05	.283	16458	3.5	18	-N	1	C	2030	25	.3	D	
HOLL	03	2027	2032	2048	S15	W06	.288	16458	3.4	21	-N	3	C		23			
208 CULG	03	2308	2312	2325	N11	W80	.985	16450	28.3	17	-F		C	2312	20			ZX
209 CULG	04	0032	0035	0048	N20	W67	.929	16451	29.0	16	-F		C	0035	30			ZX
210 PURP	04 IMP.1	0033 NO : PALE	0036 YUNN	0037 CULG	S14	W08	.285	16458	3.4	4	?N		C					ZX
211 YUNN	04	0127E	0156	0201	S15	W10	.316	16458	3.3	34D	-F		C		64	.7		ZX
GRP80212	04	0221	0228+6	0255	S16	E31	.570	16467	6.4	34	1N						E	
CULG	04	0221	0228U	0253U	S15	E31	.564	16467	6.4	32D	1N		P	0228	160	2.0		
YUNN	04	0228E	0232	0255	S18	E30	.571	16467	6.4	27D	-N		C		129	1.6		
PURP	04	0233	0234	0255	S16	E32	.583	16467	6.5	22	1B		C				E	

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq Deg.		
213 YUNN	04	0232	0250	0313	S15	W11	.325	16458	3.3	41	-F		C		96	1.0		ZX
GRP80214	04	0325>9	0358+4	0421	S14	W10	.302	16458	3.4	56	-F							
YUNN	04	0325	0402	0423	S14	W11	.312	16458	3.3	64	-N		C		64	.7		
PURP	04	0358	0358	0413	S14	W09	.293	16458	3.5	15	-F		P					
215 PURP	04	0339	0343	0353	S16	E35	.620	16467	6.8	14	-N		C					ZX
216 PURP	04	0347	0348	0352	S25	E58	.873	16476	8.5	5	-N		C					ZX
GRP80217	04	0436+4	0454+2	0536	S16	E31	.570	16467	6.5	60	1N				350	4.2	EK	
PURP	04	0436	0456	0549	S16	E32	.583	16467	6.6	73	1N	*	C		415	5.0	EK	
YUNN	04	0440	0454	0523	S17	E31	.577	16467	6.5	43	1N	*	C		230	3.3		
GRP80218	04	0437+3	0438	0446	S09	W66	.916	16469	29.2	9	-F							
PURP	04	0437	0438	0441	S10	W66	.917	16469	29.2	4	-F		C					
YUNN	04	0440		0450	S08	W66	.916	16469	29.2	10	-N		C	0445	16	.2		
GRP80219	04	0445>3	0503+3	05220	S17	W12	.361	16458	3.3	37	-B							
YUNN	04	0445	0512	0555	S17	W13	.370	16458	3.2	70	-N		C		161	1.7		
PURP	04	0508	0509	0522	S18	W12	.374	16458	3.3	14	1B		C					
220 YUNN	04	0538	0602	0655	S17	E31	.577	16467	6.6	77	?F	*	C		177	2.2		ZX
	IMP.1 NO 1 PURP			ABST														
GRP80221	04	0702	0712	0750	S14	W14	.343	16458	3.2	48	-N						EJ	
ABST	04	0702	0712	0732	S15	W16	.377	16458	3.1	30	-N		C	0712	87	.9	DJ	
ABST	04	0709	0712	0753	S14	W12	.322	16458	3.4	41	-N	*	C	0712	131	1.4	EJ	
GRP80222	04	0703>9	0732+2	0752	S17	E26	.516	16467	6.2	49	-N						EJ	
YUNN	04	0703	0732	0758	S18	E27	.536	16467	6.3	55	-N		C		32	.4		
ABST	04	0728	0734	0745	S16	E26	.508	16467	6.3	17	1N		C	0734	174	2.2	EJ	
GRP80223	04	0722+3	0727+9	0750	S08	W68	.929	16469	29.2	28	-N				70		EJ	
ISTA	04	0722	0727	0745	S10	W68	.930	16463	29.2	23	-N						E	
ABST	04	0724	0731	0750	S06	W70	.941	16469	29.1	26	1N		C	0731	87		EJ	
YUNN	04	0725	0736	0753	S07	W66	.915	16469	29.4	25	-N		C		48	1.1		
CATA	04	0740E	0740	0805D	S10	W68	.930	16463	29.2	25D	1N	2	P	0740	84			
GRP80224	04	0746>3	0748	0825	S13	W09	.365	16458	3.6	39	-F						DJ	
			0809															
ABST	04	0746	0748	0833	S17	W10	.344	16458	3.6	44	-N	*	C	0748	87	.9	DJ	
HTPR	04	0759	0808	0820	S22	W09	.410	16458	3.7	21	-F	*	C	0808	20	.2		
GRP80225	04	0800>3	0803	0840	S28	E58	.886	16476	8.7	40	-F				25	.5		
			0809>9															
HTPR	04	0800	0803	0815	S27	E51	.831	16476	8.2	15	-F		C	0803	10	.2		
HTPR	04	0805	0814	0840	S27	E56	.869	16476	8.5	35	-F		C	0814	20	.4	E	
ISTA	04	0806	0809	0820	S23	E58	.875	16476	8.7	14	-F						D	
KANZ	04	0814	0823	0841	S30	E59	.897	16476	8.8	27	-N	2						
YUNN	04	0815	0819	0813D	S30	E58	.891	16476	8.7	4D	-N		C		32	.4		
226 ABST	04	0820	0823	0840	S14	W11	.312	16458	3.5	20	-N	*	C	0823	87	.9	EJ	ZX
GRP80227	04	0833+2	0839+2	0900	S22	E07	.399	16465	4.9	27	-N				30	1.0	JL	
ABST	04	0833	0839	0855	S24	E07	.430	16465	4.9	22	-B		C	0833	131	1.4	DJ	
KANZ	04	0834	0839	0900	S22	E07	.399	16465	4.9	26	-N	2					L	
HTPR	04	0835	0841	0901	S21	E08	.389	16465	5.0	26	-N		C	0841	60	.6	E	
HTPR	04	0854	0908	0915	S22	E05	.392	16465	4.7	21	-F		C	0900	10	.1		
GRP80228	04	1030+0	1035	1054	S16	W14	.367	16458	3.4	24	-F						E	
			1043															
HTPR	04	1033	1035	1054	S16	W14	.367	16458	3.4	24	-F		C	1035	10	.1		
HEND	04	1030	1043	1053	S17	W14	.380	16458	3.4	23	-F		C	1043	22	.2	E	
GRP80229	04	1240+0	1241+5	1257	S21	W10	.401	16458	3.8	17	-N				50	.5	E	
HTPR	04	1240	1241	1301	S23	W10	.430	16458	3.8	21	-F		C	1241	20	.2	E	
CATA	04	1240E	1245	1245D	S20	W10	.387	16458	3.8	5D	-N	*	P	1245	84	.9		
HEND	04	1240	1246	1252	S21	W10	.401	16458	3.8	12	-N	*	C	1246	47	.5	E	
230 HTPR	04	1258	1302	1310	S23	E05	.407	16465	4.9	12	-F		C	1302	30	.3	E	ZX
231 KANZ	04	1307	1307	1317	S30	E57	.884	16476	8.8	10	-F	2						ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
GRP80232	04	1319+1	1323+3	1405	S16	W17	.400	16458	3.3	46	-N						
WEND	04	1309		1412D	S17	W17	.411	16458	3.3	63D	1N		C	1353	210	2.4	F
KANZ	04	1319	1326	1405D	S16	W17	.400	16458	3.3	46D	-N	2					
HTPR	04	1320	1323	1345	S16	W17	.400	16458	3.3	25	-F		C	1323	20	.2	E
GPP80233	04	1403+1	1411+2	1423	S23	E05	.407	16465	5.0	14	-F				30	.3	E
HTPR	04	1403	1411	1426	S22	E04	.383	16465	4.9	17	-F		C	1411	20	.2	E
HUAN	J4	1413	1413	1419	S23	E05	.407	16465	5.0	9	-N	1	C	1413	35	.4	
HTPR	04	1411	1413	1417	S26	E05	.503	16465	5.0	6	-F		C	1413	10	.1	
GPP80234	04	1503	1513+1	1513	S17	W16	.400	16458	3.4	10	-N						
HOLL	04	1503	1513	1518	S16	W15	.378	16458	3.5	9	-N	3	C		29		
HOLL	J4	1513	1514	1519	S18	W18	.433	16458	3.3	6	-N	3	C		36		
235 BIGB	04	1613	1614	1623	S18	W17	.422	16458	3.4	10	-N		C	1614	50	.5	ZX
GRP80236	04	1723+1	1730+1	1736	S23	E15	.542	16465	5.9	7	-N				40	.5	
BIGB	J4	1729	1733	1737	S29	E15	.542	16465	5.9	8	-N		C	1730	50	.5	
HUAN	04	1730	1731	1735	S29	E15	.542	16465	5.9	5	-N	1	C	1731	30	.4	
GRP80237	04	1805+1	1807+1	1820	S16	W18	.411	16458	3.4	15	-N				70	.8	E
BIGB	04	1805	1807	1830	S18	W17	.422	16458	3.5	25	-N		C	1807	90	1.0	
HOLL	J4	1806	1808	1820	S13	W18	.381	16458	3.4	14	-N	3	C		46		
HUAN	04	1806		1815	S16	W20	.434	16458	3.3	9	-F	1	C				E
GRP80238	04	1813+1	1817+0	1826	S25	E43	.807	16476	8.4	13	-N				60	1.0	
HOLL	04	1813	1817	1827	S24	E44	.794	16476	8.4	14	-B	3	C		81		
HUAN	J4	1814	1817	1824	S27	E50	.823	16476	8.5	10	-N	2	C	1817	40	.7	
GRP80239	04	1846+6	1847+6	1857	S25	E11	.464	16465	5.6	11	-N				40	.4	
BIGB	04	1846	1847	1858	S23	E15	.542	16465	5.9	12	-N		C	1847	50	.5	
HOLL	04	1852	1853	1856	S22	E07	.399	16465	5.3	4	-N	3	C		31		
240 CULG	04	2118	2123	2126	S13	W22	.433	16458	3.2	8	-F		C	2123	30	.3	ZX
GRP80241	04	2127>3	2143+4 2204	2252	S16	W20	.434	16458	3.4	85	-B				100	1.1	EU
HOLL	04	2127E	2153	2243	S14	W23	.454	16458	3.2	76D	-B	3	C		111		UDE
BIGB	04	2139	2149	2300	S17	W23	.480	16458	3.2	81	-B		C	2149	100	1.1	
CULG	04	2140E	2152	2224U	S16	W20	.434	16458	3.4	44D	-N		C	2152	100	1.1	
HOLL	04	2141	2153	2155D	S14	W23	.454	16458	3.2	14D	-B	3	C		111		
HOLL	J4	2151	2154	2227	S15	W21	.437	16458	3.3	36	-F	3	C		32		U
BIGB	04	2201	2204	2208	S18	W17	.422	16458	3.6	7	-N		C	2204	40	.4	
242 CULG	04	2147	2149	2205	N26	W11	.463	16461	4.1	18	-N		C	2149	120	1.3	L ZX
243 CULG	04	2153	2203	2212	S28	E11	.506	16465	5.7	19	-N		C	2203	80	.9	H ZX
244 BIGB	04	2327	2334	2341D	S08	W85	.996	16469	28.6	14D	-N		P	2334	90		ZX
GRP80245	05	0010>3	0042 0106	0122	S15	W22	.443	16458	3.4	72	-F						
YUNN	05	0010	0018	0055	S14	W22	.440	16458	3.4	45	-F		C		16	1.8	
PURP	05	0042	0042	0122	S16	W22	.457	16458	3.4	40	-F		C				
YUNN	05	0103	0106	0121	S14	W23	.453	16458	3.3	18	-N		C		64	.7	
GRP80246	05	0044+2	0046+1	0054	S15	E17	.387	16467	6.3	10	1N						E
VORO	05	0044	0046	0056	S15	E16	.376	16467	6.2	12	1N		C	0046	137	2.2	E
PURP	05	0046	0047	0051	S16	E18	.410	16467	6.4	5	1N		C				
247 YUNN	J5	0121	0126	0135	S26	E37	.458	16465	5.6	14	-F		C		48	.5	ZX
GRP80248	05	0133>9	0146+1	0155	S28	E43	.766	16476	8.3	22	-N						EJ
PURP	05	0133	0147	0153	S30	E42	.768	16476	8.2	20	-B	*	C				
VORO	05	J145	J146	0156	S26	E45	.775	16476	8.4	11	-N	*	C	J146	54	.8	EJ
249 YUNN	05	0135	0148	0210	S15	W22	.449	16458	3.4	35	-F		C		32	.4	ZX
250 YUNN	05	0210	0211	0218	S23	E44	.780	16476	8.4	8	-F		C		16	.3	ZX
GRP80251	05	0251+2	0251+2	0259	S14	W22	.440	16458	3.5	8	-F						
YUNN	05	0251E	0251	0303	S15	W22	.449	16458	3.5	12D	-F		C		16	1.8	
PURP	05	0253	0253	0254	S14	W23	.453	16458	3.4	1	-N		P				
252 PURP	J5	0253	0253	0254	S16	E14	.366	16467	6.2	1	-N		P				ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq. Deg.	
GRP80253	05	0314+0	0314+2	0322	S16	E20	.433	16467	6.6	8	-N						EL
YUNN	05	0314E	0314	0322	S17	E20	.443	16467	6.6	8D	-N		C		80	.9	
VORO	05	0314	0316	0321	S16	E20	.433	16467	6.6	7	1F		C	0316	180	2.1	EL
254 YUNN	05	0314	0322	0326	S27	E07	.473	16465	5.7	12	-F		C		32	.4	ZX
255 PURP	05	0348	0350	0353	S17	E16	.338	16467	6.4	5	-N		C				ZX
256 YUNN	05	0415	0427	0443	S27	E36	.469	16465	5.6	25	-N		C		32	.4	ZX
257 YUNN	05	0500	0509	0526	S28	E06	.484	16465	5.7	26	-N		C		64	.7	ZX
GRP80258	05	0547+1	0550+0	0555	S26	E06	.454	16465	5.7	8	-N						
YUNN	05	0547	0553	0555	S26	E06	.454	16465	5.7	8	-N		C		113	1.3	
PURP	05	0548	0550	0555	S26	E06	.454	16465	5.7	7	1N		C				
GRP80259	05	0604+5	0611+4	0628	S15	E14	.354	16467	6.3	16	-F						DJ
YUNN	05	0604	0615	0637D	S16	E14	.366	16467	6.3	33D	-N		C		48	.5	
PURP	05	0609	0611	0619	S15	E14	.354	16467	6.3	10	1F		C				
ABST	05	0609	0612	0620D	S15	E18	.399	16467	6.6	11D	-F		P	0612	131	1.4	DJ
260 HTPR	05	0743E		0805	S27	E04	.464	16465	5.6	16D	-F		C	0750	38	.3	ZX
GRP80261	05	0827>9	0843 0850+2	0915	S09	W85	.996	16469	29.0	48	-N				45		
KANZ	05	0827	0840	0915	S08	W85	.996	16469	29.0	48	-F	1					
YUNN	05	0837	0852	0315	S09	W79	.982	16459	29.4	38	-N		C		32		
CATA	05	0845	0853	0903	S11	W90	1.000	16469	28.6	15	1N	1	C	0853	56		
GRP80262	05	0938+2	0942+3 0952+5	1023	S16	E11	.337	16467	6.2	45	-N				100	1.1	E
HTPR	05	0938	0942	1030	S16	E12	.346	16467	6.3	52	-N		C	0942	120	1.2	E
MONT	05	0939	0944	1013	S15	E11	.323	16467	6.2	34	-N		C	0944	100		E
YUNN	05	0940	0945	0955D	S15	E09	.305	16467	6.1	15D	-N		C		16	1.8	
WEND	05	0940	0957	1032	S17	E13	.368	16467	6.4	52	-N		C	0957	120	1.3	F
KANZ	05	0941E	0952	1015	S16	E11	.337	16467	6.2	34D	-N	2					
GRP80263	05	1115+4	1118+4	1133	S22	W11	.420	16459	4.6	15	-F						E
KANZ	05	1115	1118	1130	S23	W13	.448	16459	4.5	15	-F	1					
HTPR	05	1119	1122	1130	S22	W10	.414	16459	4.7	11	-F		C	1122	20	.2	E
GRP80264	05	1140+4	1146+0	1150	S15	E09	.305	16467	6.2	18	-F				35	.4	E
HTPR	05	1143	1146	1153	S15	E10	.314	16467	6.2	10	-F		C	1146	20	.2	E
MONT	05	1144	1146	1150	S15	E09	.305	16467	6.2	6	-F		C	1146	50		E
265 HTPR	05	1214	1221	1232	S25	E05	.436	16465	5.3	18	-F		C	1221	20	.2	E ZX
266 KANZ	05	1224	1228	1335	S09	W85	.996	16469	29.1	41	-N	1					ZX
GRP80267	05	1309+5	1312+3	1320	S25	E43	.751	16476	8.8	11	-N				50	.7	E
HTPR	05	1303	1314	1320	S24	E43	.747	16476	8.8	11	-N		C	1314	70	.9	E
KANZ	05	1311	1312	1320	S25	E41	.732	16476	8.6	9	-N	2					
HUAN	05	1314	1315	1319	S25	E43	.751	16476	8.8	5	-F	1	C	1315	30	.5	
GRP80268	05	1408>9	1516	1606	S26	E03	.447	16465	5.8	118	-N						E
HTPR	05	1408		1535D	S26	E03	.447	16465	5.8	87D	-N		C	1512	100	1.0	E
HUAN	05	1433		1547D	S27	E03	.463	16465	5.8	74D	-N	1	P	1447	45	.5	E
HOLL	05	1506	1516	1606	S24	E02	.414	16465	5.8	60	1B	1	C		312		DE
	05	1517	1526	NO FLARE PATROL													
GRP80269	05	1649+8	1657+1	1727	S20	00	.349	16465	5.7	38	-N				60	.6	
HOLL	05	1649	1657U	1700D	S24	E01	.413	16465	5.8	11D	-N	1	C		77		
BIGB	05	1657	1658	1727	S17	E08	.299	16465	5.7	30	-N		C	1658	40	.4	
GRP80270	05	1825+7	1833+2	1847	S14	E06	.269	16467	6.2	22	-N				35	.4	
BIGB	05	1825	1833	1853	S16	E05	.294	16467	6.1	28	-N		C	1833	40	.4	
HOLL	05	1832	1835	1841	S13	E08	.268	16467	6.4	9	-N	3	C		30		
GRP80271	05	2015+2	2013+3	2037	S15	W33	.589	16458	3.4	22	-N				70	.9	
BIGB	05	2015	2022	2042	S15	W35	.619	16458	3.2	27	-N		C	2022	90	1.1	
HOLL	05	2017	2018	2032	S15	W31	.563	16458	3.5	15	-F	2	C		20		
HOLL	05	2019	2019	2031	S14	W32	.571	16458	3.4	12	-N	2	C		27		
GRP80272	05	2016+1	2020+2	2045	S14	E05	.263	16467	6.2	29	-N				70	.7	
BIGB	05	2016	2022	2049	S16	E05	.294	16467	6.2	33	-N		C	2022	80	.8	
HOLL	05	2017	2020	2041	S13	E05	.247	16467	6.2	24	-N	2	C		56		

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq. Deg.		
273 CULG	05	2323U	2330U	2340U	S16	E03	.287	16467	6.2	17D	-F		P	2330	130	1.3		ZX
274 CULG	06	0032	0034	0041	S23	W16	.469	16465	4.8	9	-F		C	0034	30	.3		ZX
275 VORO	06	0138	0140	0208	S15	W40	.674	16458	3.1	30	-N		C	0140	134	1.8	EJ	ZX
80276	06	0141	0150	0230	S23	W27	.630	0	4.0	49	-F						L	
YUNN	06	0210E	0210	0247	S15	W38	.650	0	3.2	37D	-N		C		80	1.0		
VORO	06	0227	0228	0243	S16	W40	.678	0	3.1	16	1F		C	0228	197	2.7	EJ	
			0228															
277 CULG	06	0141	0150	0230	S23	W27	.630	16458	4.0	49	*-F		C	0150	150	2.0	L	ZX
GRP80278	06	0322+0	0324+0	0329	S09	E44	.704	16478	9.4	7	-N				130	1.8	D	
VORO	06	0322	0324	0328	S09	E44	.704	16478	9.4	6	-N		C	0324	90	1.3	D	
CULG	06	0322	0324U	0330U	S10	E44	.707	16478	9.4	8D	1F		C	0324	170	2.2		
GRP80279	06	0350+1	0354+1	0415	S14	W39	.658	16458	3.2	25	1N				280	3.7	E	
YUNN	06	0350	0355	0415	S15	W39	.662	16458	3.2	25	1N		C		290	3.8		
VORO	06	0351	0354	0400D	S14	W40	.670	16458	3.2	9D	1N		P	0354	269	3.7	E	
280 CULG	06	0523	0528	0545	N13	W57	.847	16463	1.3	22	-F		C	0528	70	1.3		ZX
281 CULG	06	0744	0745	0750	S29	E27	.630	16476	8.3	6	-F		C	0745	40	.6		ZX
282 CULG	06	0754	0758	0804D	S27	W39	.724	16458	3.4	10D	-F		P	0758	20	.3		ZX
283 MONT	06	0906	0908	0913	S26	W09	.464	16465	5.7	7	-F		C	0908	50		E	ZX
GRP80284	06	1010+2	1014+0	1024	S16	W05	.292	16467	6.0	14	-F				35	.4	E	
HTPR	06	1010	1014	1028	S18	W07	.334	16467	5.9	18	-F		C	1014	20	.2	E	
MONT	06	1012	1014	1020	S15	W04	.272	16467	6.1	8	-F		C	1014	50		E	
GRP80285	06	1116+4	1120+2	1134	S27	W13	.484	16465	5.7	18	-N				80	.9	E	
HTPR	06	1116		1134D	S27	W12	.494	16465	5.6	18D	-N		C	1120	80	.9	E	
MONT	06	1117	1122	1132	S26	W10	.469	16465	5.7	15	-F		C	1122	70		E	
CATA	06	1120	1120	1145	S27	W10	.484	16465	5.7	25	-B	2	C	1120	169	2.0		
GRP80286	06	1130+2	1132	1152	S16	W07	.334	16467	6.0	22	-F							
			1140															
ATHN	06	1130E	1132	1135D	S18	W10	.354	16467	5.7	5D	-N	3	V	1132	38	1.0		
MONT	06	1132	1140	1152	S15	W04	.272	16467	6.2	20	-F		C	1140	70			
GRP80287	06	1142	1208	1232D	N13	W58	.856	16463	2.1	50	-F				35	.7	DH	
MONT	06	1142	1208	1232D	N15	W57	.850	16463	2.2	50D	-F		C	1208	50		DH	
HTPR	06	1201E		1217D	N12	W60	.872	16463	2.0	16D	-F		C	1207	20	.4		
288 HUAN	06	1347	1349	1353	S17	W44	.727	16458	3.3	6	-F	1	C	1349	45	.7	E	ZX
289 HOLL	06	1719	1724	1754	S15	W08	.296	16467	6.1	35	-N	3	C		125			ZX
	06	1734	1752	NO FLARE PATROL														
290 CULG	07	0050	0122	0200	N32	E70	.957	16489	12.3	70	1F		C	0122	90		F	ZX
291 CULG	07	0105	0111	0119	S15	W53	.814	16458	3.1	14	?F		C	0111	180	3.1		ZX
	IMP.1 NO : MITK																	
GRP80292	07	0151+1	0153	0236	S25	W22	.544	16465	5.4	45	1B						FU	
			0210															
CULG	07	0151	0153U	0240U	S25	W23	.553	16465	5.4	49D	2B		C	0153	440	5.3	FU	
YUNN	07	0152	0210	0232	S25	W21	.535	16465	5.5	40	1B		C		290	3.4		
293 CULG	07	0245	0255U	0320	N29	W63	.917	16471	2.4	35	-F		C	0255	60	1.5		ZX
GRP80294	07	0710	0718+2	0734	S26	W22	.554	16465	5.6	24	-N				160	1.9	F	
CULG	07	0710	0718U	0733	S26	W23	.563	16465	5.6	23	1N		C	0718	210	2.4	F	
CATA	07	0715E	0720	0735	S26	W22	.554	16465	5.7	20D	-N	2	P	0720	112	1.4		
295 CULG	07	0718	0721	0739U	N21	E48	.780	16486	10.9	21D	-F		C	0721	70	1.1	U	ZX
296 HTPR	07	0918E		0923	S09	E24	.432	16478	9.2	5D	-F		C	0919	20	.2	E	ZX
297 HTPR	07	0940	0949	1003	N19	E85	.997	16496	13.8	23	-F		C	0949	30			ZX
298 HTPR	07	0959	1002	1015	S23	E02	.394	16476	7.6	16	-F		C	1002	20	.2	E	ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.		
GRP80299	07	1433>3	1503+3	1524C	S17	W20	.440	16467	6.1	51	-N						E	
HTPR	07	1433		1511D	S17	W20	.440	16467	6.1	380	1B		C	1450	250	2.5		
HOLL	07	1443	1506	1524	S17	W20	.440	16467	6.1	41	-N	1	C		126		F	
HOLL	07	1457	1503	1524	S17	W20	.440	16457	6.1	27	-F	3	C		63			
BIGB	07	1516E	1516U	1618	S17	W20	.440	16467	6.1	620	-N		P	1516	130	1.4		
300 HUAN	07	1847		1856D	N08	E28	.485	16457	9.9	90	-F	1	P	1856	25	.3	D	ZX
GRP80301	07	1914+1	1917+1	1936D	S27	W28	.613	16465	5.7	22	-B				120	1.5		
BIGB	07	1914	1917	2J12	S25	W32	.641	16465	5.4	58	-B		C	1917	120	1.5		
HOLL	07	1915	1918	1936	S27	W27	.610	16465	5.8	21	-B	3	C		171		F	
HUAN	07	1920E		1933D	S28	W28	.628	16465	5.7	130	-N	1	P	1922	80	1.0	E	
GRP80302	07	1943	1947	2000	S18	W62	.895	16458	3.2	17	-N							
HOLL	07	1943	1947	2J36	S18	W62	.895	16458	3.2	23	-N	3	C		38		F	
HUAN	07	1949F		1953	S18	W62	.895	16458	3.2	40	-F	1	P				E	
303 HOLL	07	2058	2059	2107	S18	W61	.888	16458	3.3	9	-N	3	C		31		F	ZX
304 PURP	08	0019	0023	0035	S15	W43	.738	0	4.8	16	-F		C					ZX
	08	0038	0053	NO FLARE PATROL														
305 CULG	08	0126E	0130U	0200U	S16	W65	.914	16458	3.2	340	?F		P	0130	280			ZX
	IMP.1 NO : MITK PALE																	
306 CULG	08	0223	0234	0246	S25	W43	.804	16453	4.4	23	-F		P	0234	50	.9		ZX
GRP80307	08	0414>9	0438 0447	0517	S16	W69	.939	16458	3.0	63	1F						FL	
PURP	08	0414	0447	0520	S16	W68	.933	16458	3.1	66	1F		C					
CULG	08	0433	0438	0513	S17	W70	.945	16458	2.9	40	1F		C	0438	100		FL	
308 PURP	08	0531	0532	0534	N09	E22	.402	16487	9.9	3	-F		C					ZX
GRP80309	08	0520+4	0524+1	0546	S13	E15	.338	16478	9.3	26	1N						E	
CULG	08	0520	0524	0547	S13	E13	.314	16478	9.2	27	1N		C	0524	210	2.3		
PURP	08	0524	0525	0535	S14	E15	.349	16478	9.4	11	1B		C				E	
YUNN	08	0536E	0536	0546	S13	E16	.350	16478	9.4	100	-N		C		32	.3		
310 ABST	08	0639F	0644	0648D	N09	E18	.343	16487	9.6	90	-N		P	0644	131	1.4	EJ	ZX
311 ABST	08	0641E	0644	0650D	N21	E85	.997	16507	14.7	90	?N		P	0644	87		AD	ZX
	IMP.1 NO : PURP YUNN																	
312 ABST	08	0642	0644	0648D	N11	E43	.765	16486	12.0	60	-N		P	0644	87	1.4	DJ	ZX
313 ABST	08	0642	0644	0714D	N23	E32	.625	16499	10.7	320	-N		P	0644	131	1.7	EJ	ZX
GRP80314	08	0725+3	0729+1	0734	S26	W05	.445	16476	7.9	9	-F				48	.4		
CATA	08	0725	0730	0735	S26	W04	.443	16476	8.0	10	-F	2	C	0730	45	.5		
YUNN	08	0728	0723	0732	S26	W06	.448	16476	7.3	4	-F		C		32	.4		
GRP80315	08	0728+8	0734+5	0800	S13	E13	.314	16478	9.3	32	-N				110	1.2	EJ	
YUNN	08	0728	0734	0805	S14	E13	.326	16478	9.3	37	-N		C		64	.7		
ABST	08	0736E	0738	0800	S13	E18	.376	16478	9.7	240	-N		P	0738	131	1.4	EJ	
ABST	08	0736	0733	0800	S12	E12	.291	16478	9.2	24	-N		C	0739	131	1.4	EJ	
316 YUNN	08	0830	0838	0919	N21	E35	.644	16486	11.0	49	-N		C		80	1.0		ZX
GRP80317	08	0838+2	0843+2	0850	S28	E77	.980	16500	14.1	12	1N				90		E	
YUNN	08	0838	0843	0850	S28	E74	.970	16500	13.9	12	1N		C		80			
CATA	08	0843	0845	0855D	S28	E77	.980	16500	14.1	150	1N	2	P	0845	112			
ISTA	08	0840		0848	S31	E80	.989	16500	14.4	8	-F						E	
318 KANZ	08	1022	1022	1030	S14	W27	.503	16467	6.4	8	-N	2						ZX
319 CATA	08	1030	1030	1043	S15	W27	.509	16467	6.4	10	-N	2	C	1030	84	1.0		ZX
GRP80320	08	1045+5	1054+1	1120	N11	E26	.471	16490	10.4	35	-B							
KANZ	08	1045	1054	1120	N10	E25	.451	16490	10.3	35	-N	2					FE	
CATA	08	1050	1055	1055D	N13	E27	.496	16490	10.5	50	1B	2	P	1055	394	4.7		
321 KANZ	08	1131	1135	1155	S18	W70	.946	16458	3.2	24	-N	2						ZX
322 ATHN	08	1347E	1349	1351	S13	W23	.442	16467	6.8	40	-N	3	V	1349	66	.7		ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq Deg.	
	08	1400	1407	NO FLARE PATROL													
323 HUAN	08	1458		1502	N24	E80	.987	16507	14.6	4	-F	1	C				ZX
324 HOLL	08	1525	1530	1601	N22	E28	.574	16486	10.7	36	-N	3	C		68		ZX
GRP80325	08	1533+1	1535	1556	N08	E15	.292	16487	9.8	23	-F						E
HUAN	08	1533		1554	N08	E16	.306	16487	9.8	21	-F	1	C				E
HOLL	08	1534	1535	1557	N09	E15	.300	16487	9.8	23	-N	3	C		30		
326 HOLL	08	1539	1539	1547	N15	E58	.859	16506	13.0	8	-F	3	C		18		ZX
GRP80327	08	1545	1546	1630D	S17	W33	.597	16467	6.2	45	-N						F
HOLL	08	1545	1546	1630	S18	W34	.615	16467	6.1	45	-N	3	C		50		F
BIGB	08	1543E	1543U	1721	S17	W32	.585	16467	6.3	320	-B		P	1543	150	1.8	
328 HOLL	08	1545	1559	1647	S25	W43	.749	16465	5.4	62	-N	3	C		69		ZX
329 BIGB	08	1638	1639	1652	N25	E80	.988	16507	14.7	14	-N		C	1639	100		ZX
330 HOLL	08	1712	1713	1724	N15	E57	.850	16506	13.0	16	-F	3	C		57		ZX
331 BIGB	08	1759	1800	1808	S23	W04	.396	16476	8.4	9	-N		C	1800	50	.5	ZX
332 BIGB	08	1911	1913	1918	N09	E15	.300	16487	9.9	7	-N		C	1913	30	.3	ZX
333 BIGB	08	1912	1916	1927	N12	W90	1.000	16463	2.1	15	-N		C	1916	20		ZX
GRP80334	08	1920+4	1923+0	1930	S15	W32	.574	16467	6.4	10	-N				30	.4	E
HOLL	08	1920	1923	1930	S16	W32	.573	16467	6.4	10	-N	3	C		26		
BIGB	08	1922	1923	1938	S15	W32	.574	16467	6.4	16	-B		C	1923	30	.4	
HUAN	08	1924		1929	S15	W31	.561	16467	6.5	5	-F	1	C				E
335 BIGB	08	1935	1940	1949	N12	W90	1.000	16463	2.1	14	-N		C	1940	30		ZX
336 HOLL	08	1941	1945	2011	S12	E10	.269	16478	9.6	30	-F	3	C		50		ZX
337 HOLL	08	1955	1956	2019	S15	E45	.730	16495	12.2	24	-F	3	C		60		ZX
338 BIGB	08	1959	2008	2022	N12	W90	1.000	16463	2.1	23	-N		C	2008	30		ZX
GRP80339	08	2022>9	2101+1	2117	S15	E45	.730	16495	12.2	55	-F				50	.7	K
HOLL	08	2022	2101	2117	S15	E44	.719	16495	12.1	55	-F	3	C		48		
CULG	08	2046	2102	2117	S16	E46	.744	16495	12.3	31	-F		C	2102	50	.8	KT
GRP80340	08	2031+1	2035+5	2106	N07	E13	.254	16487	9.8	35	-B				60	.6	F
BIGB	08	2031	2036	2106	N07	E13	.254	16487	9.8	35	-B		C	2036	40	.4	
CULG	08	2031	2040U	2109	N07	E14	.269	16487	9.9	38	-N		P	2040	200	2.0	F
HOLL	08	2032	2035	2102	N07	E12	.240	16487	9.8	30	-B	3	C		55		F
341 BIGB	08	2034	2043	2055	N12	W90	1.000	16463	2.1	21	-N		C	2043	20		ZX
342 BIGB	08	2101	2103	2112	N12	W90	1.000	16463	2.1	11	-N		C	2103	30		ZX
343 CULG	08	2105	2109	2115	S13	E06	.247	16478	9.3	10	-F		C	2109	60	.6	ZX
GRP80344	08	2133+6	2202+1	2219	N07	E11	.225	16487	9.7	46	-N						FK
CULG	08	2133	2203	2222	N07	E12	.240	16487	9.8	49	1N		C	2203	280	2.8	KF
HOLL	08	2133	2202	2216	N08	E10	.221	16487	9.7	37	-F	3	C		34		
345 HOLL	08	2144	2145	2219	S12	E08	.249	16478	9.5	35	-N	3	C		47		ZX
346 HOLL	08	2149	2149	2155	N27	E69	.948	16507	14.1	6	-F	3	C				ZX
347 HOLL	08	2157	2215	2233	S14	E43	.705	16495	12.1	42	-N	3	C		31		ZX
348 BIGB	08	2218	2223	2232	N12	W90	1.000	16463	2.2	14	-N		C	2223	20		ZX
349 BIGB	08	2322	2327	2335	N12	W90	1.000	16463	2.2	13	-B		C	2327	30		ZX
350 CULG	09	0206E	0225	0349U	S16	E41	.688	16495	12.2	1030	-F		P	0225	100	1.4	KT ZX
351 CULG	09	0207	0212	0214D	S20	W34	.626	16467	6.5	70	-F		P	0212	100	1.3	ZX
	09	0308	0314	NO FLARE PATROL													
	09	0325	0327	NO FLARE PATROL													

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF	TYPE	TIME UT	MEAS. AREA Mil. of Disc	CORR AREA Sq. Deg.		
352 CULG	09	0335	0353	0420U	S15	W36	.623	16467	6.4	45D	1N		C	0353	160	2.1	KF	ZX
353 CULG	09	0459	0503	0520	S13	E42	.711	16435	12.4	21	-F		C	0503	110	1.4	UT	ZX
354 CULG	09	0543	0554U	0631D	N24	E78	.958	16507	14.5	21D	?N		P	0554	150		F	ZX
	IMP.1 MO : YUNN																	
355 YUNN	09	0643	0651	0700	S17	E37	.645	16435	12.1	17	-N		C		80	1.1		ZX
GRP80356	09	0643>9	0659+1	0714	S18	W76	.973	16458	3.6	31	-F				35		F	
YUNN	09	0643	0700	07000	S18	W72	.956	16458	3.9	17D	-N		C		32			
CULG	09	0658	0659	0714	S19	W80	.986	16458	3.3	16	-F		C	0659	40		F	
357 ISTA	09	0705E		0755	S10	E01	.173	16478	9.4	50D	-N						D	ZX
GRP80358	09	0705>3	0731	0741	N25	E71	.956	16507	14.6	36	-F						D	
ISTA	09	0705E		0738	N27	E72	.962	16507	14.7	33D	-F	*					D	
CULG	09	0719	0731	0743	N24	E70	.950	16507	14.6	24	1F	*	C	0731	100			
359 ISTA	09	0825		0840	N24	E65	.923	16507	14.2	15	-F						D	ZX
GRP80360	09	0850	0902+3	0925	S17	E38	.657	16495	12.2	35	-N				80	1.1	D	
ISTA	09	0850		0915	S16	E41	.688	16435	12.4	25	-F						D	
YUNN	09	0900E	0902	09030	S17	E38	.657	16435	12.2	30	-N		P		64	.8		
ATHN	09	0900E	0905	0935	S18	E38	.661	16495	12.2	35D	-B	3	V	0905	98	1.5		
361 BIGB	09	1552	1553	1605	S14	W43	.704	16467	6.4	13	-B		C	1553	10	.1	D	ZX
362 BIGB	09	1631	1633	1645	S07	W05	.148	16478	9.3	14	-N		C	1633	20	.2		ZX
GRP80363	09	1631+0	1634	1645	S15	E32	.573	16495	12.1	14	-F							
BIGB	09	1631	1634	1653	S15	E32	.573	16495	12.1	22	-N	*	C	1634	40	.5		
HUAN	09	1631		1637	S15	E32	.573	16435	12.1	6	-F	*	C					
GRP80364	09	1634+1	1637+5	1713	N27	E61	.902	16507	14.3	39	-N				60	1.4		
BIGB	09	1634	1637	1716	N27	E61	.902	16507	14.3	42	-N		C	1637	50	1.0		
HUAN	09	1635		1709	N27	E64	.921	16507	14.5	34	-F	1	C				D	
HOLL	09	1638E	1642	16450	N25	E58	.878	16507	14.0	70	-B	3	C		80		F	
GRP80365	09	1739+1	1743	1749	S14	W45	.727	16467	6.4	10	-F						D	
BIGB	09	1739	1740	1750	S13	W45	.724	16467	6.4	11	-N		C	1740	20	.3		
HUAN	09	1740		1747	S15	W45	.730	16467	6.4	7	-F	1	C				D	
366 BIGB	09	1750	1751	1813	S15	E31	.560	16495	12.1	23	-N		C	1751	60	.7		ZX
367 BIGB	09	1833	1834	1844	S15	E30	.547	16495	12.0	11	-N		C	1834	40	.4		ZX
368 BIGB	09	1910	1911	1921	S16	E90	1.000	16516	16.5	11	-N		C	1911	20			ZX
GRP80369	09	2120+4	2122+2	2133	N19	E46	.755	16436	13.3	13	-N				20	.3		
BIGB	09	2120	2122	2130	N19	E48	.775	16496	13.5	10	-N		C	2122	20	.3		
HOLL	09	2124	2124	2129	N20	E45	.748	16496	13.3	5	-N	3	C		18			
370 CULG	09	2130	2133U	2153	N24	E61	.837	16507	14.5	23	-F		C	2139	30	.6		ZX
371 HOLL	09	2150	2151	2154	S15	E28	.521	16495	12.0	4	-N	3	C		21			ZX
372 BIGB	09	2212	2214	2242	S15	W30	1.000	16458	3.2	30	-N		C	2214	20			ZX
373 CULG	09	2222	2230	2253	N11	E43	.697	16506	13.2	28	-F		C	2233	20	.3		ZX
374 BIGB	09	2241E	2241U	2246	S15	E28	.521	16495	12.0	50	-N		P	2241	20	.2		ZX
375 CULG	09	2243	2243	2301	S17	W53	.817	16467	6.0	18	-N		C	2249	60	1.0	F	ZX
376 BIGB	09	2255	2257	2313	S15	W90	1.000	16458	3.2	18	-N		C	2257	20			ZX
	09	2355	0002	NO FLARE PATROL														
	10	0003	0026	NO FLARE PATROL														
	10	0114	0121	NO FLARE PATROL														
	10	0123	0126	NO FLARE PATROL														
377 YUNN	10	0248	0250	02520	N15	W39	.662	16483	7.2	4D	-N		C		64	.8		ZX
378 ABST	10	0628	0631	0640	N20	E15	.423	16486	11.4	12	-F		C	0631	131	1.4	EJ	ZX
379 ABST	10	0629	0630	0648	N11	F13	.294	16498	11.2	11	-N		C	0630	87	.9	EJ	ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAT	MIN.		CONG	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
380 ABST	10	0646	0649	0655	N13	E36	.617	16490	13.0	9	-N		C	0649	87	1.1	DJ	ZX
381 ABST	10	0646	0649	0655	N12	E13	.305	16506	11.3	9	-N		C	0649	87	.9	DJ	ZX
382 ABST	10	0736	0746	0750	N06	W07	.163	16487	9.8	14	?N		C	0746	261	2.6	EJ	ZX
	IMP.1 NO : CULG CATA																	
	10	1435	1412	NO FLARE PAT FOL														
383 BIGB	10	1522	1527	1538	S15	W90	1.000	16458	3.3	16	-N		C	1527	70			ZX
384 BIGB	10	1634	1641	1655	S15	E25	.481	16495	12.6	21	-N		C	1641	43	.5		ZX
GRP80385	10	1758+1	1800+0	1802	S34	W01	.556	16493	10.7	4	-F				50	.6		
HOLL	10	1758	1800	1804	S33	E00	.541	16493	10.7	6	-F	3	C		53			
BIGB	10	1758	1800	1801	S34	W03	.557	16493	10.5	3	-N		C	1800	60	.6		
HUAN	10	1759		1802	S35	W01	.573	16493	10.7	3	-F	1	C					
GRP80386	10	1835+1	1839	1843	S34	W02	.556	16493	10.6	8	-F				45	.5	E	
BIGB	10	1835	1839	1844	S34	W03	.557	16493	10.5	9	-N		C	1839	40	.4		
HUAN	10	1836		1841	S35	W02	.571	16493	10.6	5	-F	1	C	1838	45	.6	E	
GRP80387	10	1848+0	1848	1900	N25	E46	.778	16507	14.2	12	-F							
HOLL	10	1848	1848	1858	N26	E46	.783	16507	14.2	10	-N	3	C		22			
HUAN	10	1848		1901	N25	E46	.778	16507	14.2	13	-F	1	C					
388 HUAN	10	1857		1904	S34	W01	.556	16493	10.7	7	-F	1	C				E	ZX
389 BIGB	10	1907	1908	1918	S21	W75	.970	16465	5.2	11	-N		C	1908	30			ZX
390 BIGB	10	1915	1916	1925	S14	W58	.857	16467	6.5	10	-N		C	1916	60	1.1		ZX
391 CULG	10	1958E	2000	2004	S16	E12	.337	16495	11.7	60	-F		P	2000	60	.6		ZX
392 CULG	10	2027	2031	2036	N18	E35	.623	16496	13.5	9	-F		C	2031	60	.8		ZX
393 CULG	10	2041U	2043U	2055U	N25	E47	.787	16507	14.4	140	-F		C	2043	110	1.7		ZX
394 CULG	10	2041	2049	2058	N10	W10	.247	16487	10.1	17	-F		C	2049	150	1.5		ZX
395 BIGB	10	2105	2107	2111	S24	W80	.987	16465	4.3	6	-N		C	2107	40			ZX
GRP80396	10	2107+0	2107+1	2109	S14	W60	.874	16467	6.4	2	-F				45	.9	V	
BIGB	10	2107	2108	2110	S14	W60	.874	16467	6.4	3	-N		C	2108	40	.8		
CULG	10	2107	2107	2108	S14	W60	.874	16467	6.4	1	-F		C	2107	50	1.0	V	
397 CULG	10	2201	2212	2223	N18	E29	.557	16496	13.1	22	-F		C	2212	40	.5		ZX
398 CULG	10	2244U	2248U	2254U	N14	W53	.813	16483	7.0	100	-F		C	2248	60	1.0	T	ZX
399 CULG	10	2317	2318	2344	S18	W85	.996	16465	4.6	27	?N		C	2318	70		IK	ZX
	IMP.1 NO : HOLL PALE																	
400 VORO	11	0208	0210	0221	N27	E47	.796	16507	14.6	13	-N		C	0210	27	.4	EJ	ZX
401 VORO	11	0242	0243	0245	S15	E14	.344	16495	12.2	3	-B		C	0244	116	1.3	E	ZX
402 VORO	11	0334	0334	0343	S16	W64	.906	16467	6.3	9			P	0334				ZX
403 VORO	11	0352	0352	0354	N20	E31	.596	16496	13.5	2	-N		C	0352	36	.4	D	ZX
404 ABST	11	0558	0603	0620	N14	W56	.841	16483	7.0	22	-N		C	0603	87	1.6	DJ	ZX
GRP80405	11	0558>9	0621+0 0627	0649	N23	E39	.701	16507	14.2	51	1N				200	2.8	JS	
CULG	11	0558U	0621U	0700U	N23	E40	.712	16507	14.2	62D	1N	*	C	0621	150	2.1	SF	
ABST	11	0619	0621	0638	N25	E38	.703	16507	14.1	19	1N	*	C	0621	261	3.8	EJ	
YUNN	11	0626	0627	0629D	N22	E39	.696	16507	14.2	3D	-N	*	C		96	1.3		
GRP80406	11	0618+8	0632+2	0701	S15	E04	.261	16495	11.6	43	-N				140	1.4	FJ	
CULG	11	0618U	0634U	J65JU	S15	E03	.258	16495	11.5	32D	-F		C	0634	150	1.5	F	
ABST	11	0626	0632	0658	S14	E05	.250	16495	11.6	32	-N		C	0632	131	1.4	FJ	
YUNN	11	0626E	0626	0704	S15	E04	.261	16495	11.6	38D	-N		C		80	.8		
407 YUNN	11	0626	0627	0623	N12	W54	.819	16483	7.2	3	-F		C		32	.6		ZX
408 CULG	11	0745	0749	0752	S16	W70	.944	16467	6.1	7	?F		C	0749	140			ZX
	IMP.1 NO : ABST YUNN CATA																	

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LON. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR. AREA Sq. Deg.		
409 ABST	11	0817E	0818	0833	S13	E10	.277	16495	12.1	16D	-N		P	0818	131	1.3	EJ	ZX
410 ABST	11	0837	0839	0850	S16	W34	.602	16478	8.8	13	-N		C	0839	87	1.1	D	ZX
411 ABST	11	0848	0852	0856	N13	W06	.253	16490	10.9	8	-N		C	0852	87	.9	DK	ZX
412 CATA	11	1159E	1213	1240	N26	E41	.737	16507	14.6	50D	1N	2	P	1210	169	2.6		ZX
	11	1400	1509	NO FLARE PAT SOL														
GRP80413	11	1530+1	1531	1544	N11	W09	.250	16490	11.8	14	-N				53	.5		
BIGB	11	1530	1531	1543	N11	W09	.250	16490	11.8	13	-N		C	1531	70	.7		
HUAN	11	1531		1545	N11	W10	.261	16490	10.9	14	-N	1	C	1537	30	.3		
414 BIGB	11	1612	1614	1622	S34	E35	.731	16500	14.3	10	-N		C	1614	40	.5		ZX
415 BIGB	11	1643	1644	1647	N11	W13	.296	16490	10.7	4	-B		C	1644	40	.4		ZX
GRP80416	11	1656+0	1658	1722	N12	E16	.344	16506	12.3	26	-F						E	
BIGB	11	1656	1658	1722	N13	E17	.367	16506	13.0	26	-N		C	1658	60	.6		
HUAN	11	1656		1731D	N12	E16	.344	16506	12.9	50	-F	1	P				E	
417 BIGB	11	1708	1710	1715	N25	E35	.673	16507	14.3	7	-N		C	1710	70	.9		ZX
418 BIGB	11	1721	1722	1745	S35	W13	.538	16493	10.7	24	-N		C	1722	60	.6		ZX
419 BIGB	11	1725	1728	1810	N14	W64	.906	16483	6.9	45	-N		C	1728	30	.7		ZX
420 BIGB	11	1312	1317	1333	N09	W24	.433	16487	10.0	27	-N		C	1317	20	.2		ZX
421 HUAN	11	1912		1915D	N22	E17	.467	16496	13.1	3D	-F	*	P					ZX
422 BIGB	11	1941	1943	2000	N11	W12	.284	16490	10.9	19	-F		C	1943	30	.3		ZX
423 BIGB	11	1955	1957	2010	S14	W74	.963	16467	6.3	15	-B		C	1957	40			ZX
424 BIGB	11	1955	2001	2005	S25	W90	1.000	16465	5.1	10	-N	*	C	2001	70			ZX
425 BIGB	11	2003	2004	2010	S41	W38	1.000	0	5.1	7	-N	*	C	2004	50			ZX
426 CULG	11	2045	2051	2056	N25	E33	.653	16507	14.3	11	-F		C	2051	60	.8		ZX
427 BIGB	11	2135	2137	2146	N25	E31	.633	16507	14.2	11	-N		C	2137	60	.7		ZX
428 BIGB	11	2149	2151	2154	N25	E31	.633	16507	14.2	5	-N		C	2151	50	.6		ZX
GRP80429	11	2201+1	2206+3	2225	N24	E35	.666	16507	14.5	24	-F							
CULG	11	2201E	2209	2238U	N24	E35	.666	16507	14.5	37D	-F	*	P	2209	150	2.0		
BIGB	11	2202	2206	2212	N25	E35	.673	16507	14.5	10	-N	*	C	2206	30	.4		
430 BIGB	11	2202	2203	2212	S17	W41	.693	16478	8.8	10	-N		C	2203	30	.4		ZX
GRP80431	11	2210>9	2228 2249	23410	S15	E70	.943	16516	17.2	91	-N						FK	
CULG	11	2210	2228	0035	S16	E71	.949	16516	17.2	145	1F		C	2228	150		FK	
BIGB	11	2237	2249	2341	S14	E70	.943	16516	17.2	64	-N		C	2249	80			
432 BIGB	11	2220	2226	2235	S25	W30	1.000	16465	5.2	15	-N		C	2226	40			ZX
433 BIGB	11	2243	2251	2349	N25	E30	.623	16507	14.2	66	?B		C	2251	200	2.4		ZX
	IMP.1 NO : CULG																	
434 BIGB	11	2313	2315	2317	N20	E15	.424	16496	13.1	4	-N		C	2315	60	.6		ZX
435 VORO	11	2354	2356	0014	N12	W14	.319	16490	10.9	20	-N		C	2356	108	1.2	D	ZX
GRP80436	12	0015+2	0018+0	0027	N14	W65	.913	16483	7.1	12	-N				25		D	
CULG	12	0015	0018	0023	N15	W65	.914	16483	7.1	14	-N		C	0018	30	.8		
VORO	12	0017	0018	0024	N14	W66	.920	16483	7.1	7	-N		C	0018	18	.4	D	
437 CULG	12	0016	0022	0029	N19	E15	.414	16496	13.1	13	-F		C	0020	40	.4	T	ZX
GRP80438	12	0021+1	0025+2	0040	S17	W44	.723	16478	8.7	19	-F				45	.7	D	
CULG	12	0021	0027	0042	S17	W44	.723	16478	8.7	21	-N		C	0027	50	.7		
VORO	12	0022	0025	0037	S17	W44	.723	16478	8.7	15	-F		C	0025	36	.5	D	

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.		
439 CULG	12	0034	0043	0048	N20	E15	.426	16496	13.1	14	-F		C	0043	50	.5	TF	ZX
GRP80440	12	0100+2	0104+2	0121	N11	W13	.297	16490	11.1	21	-N				170	1.8	EK	
CULG	12	0100	0104	0140	N10	W13	.287	16490	11.1	40	-N		C	0104	180	1.8	FK	
PURP	12	0102	0105	0121	N12	W13	.308	16490	11.1	19	1N		C				E	
VORO	12	0102	0106	0120	N11	W13	.297	16490	11.1	18	-B		C	0106	170	1.8	E	
441 VORO	12	0121	0126	0135	N12	W15	.333	16490	10.9	14	?F		C	0126	242	2.6		ZX
	IMP.1 NO : CULG PURP																	
442 CULG	12	0225	0229	0233	N20	E14	.417	16496	13.2	8	-N		C	0228	70	.8	T	ZX
443 CULG	12	0239	0245	0254	S16	W08	.299	16495	11.5	15	-N		C	0245	20	.2		ZX
444 CULG	12	0247	0253	0308U	N16	E34	.687	16505	14.7	21U	-F		C	0253	60	.8		ZX
445 VORO	12	0316	0319	0335	N23	E33	.684	16507	14.6	19	-N		C	0319	116	1.6	D	ZX
446 CULG	12	0343	0345U	0407U	N20	E13	.409	16496	13.1	24U	-N		C	0345	70	.8	T	ZX
447 PURP	12	0421	0422	0435	N17	E31	.576	16505	14.5	14	-F		P					ZX
448 PURP	12	0530	0532	0542	N13	W67	.926	16483	7.2	12	1F		C					ZX
GRP80449	12	0540	0556+0	0630	N24	E25	.566	16507	14.1	50	1N						EK	
PURP	12	0540	0556	0629	N23	E26	.567	16507	14.2	49	2N		C		755	9.2		
ABST	12	0556E	0556	0630	N25	E25	.576	16507	14.1	34U	1N		P	0556	348	4.6	EK	
450 PURP	12	0631	0635	0636	S25	E10	.444	16503	13.0	5	-F		C					ZX
GRP80451	12	0650+3	0654+0	0702	N16	E30	.558	16505	14.5	12	-N						DJ	
ABST	12	0650	0654	0705	N16	E30	.558	16505	14.5	15	-N		C	0654	87	1.1	DJ	
PURP	12	0653	0654	0659	N17	E30	.564	16505	14.5	6	-N		C					
452 PURP	12	0730E	0730	0732	S15	W05	.264	16495	11.9	20	-F		P					ZX
GRP80453	12	0730+1	0730+4	0743	N12	E10	.275	16506	13.1	13	-N				120	1.3	EJ	
CATA	12	0730	0730	0740	N12	E10	.275	16506	13.1	10	-N	2	C	0730	112	1.2		
ABST	12	0731	0734	0745	N13	E10	.288	16506	13.1	14	-N		C	0734	131	1.3	EJ	
GRP80454	12	0849+1	0850+4	0905D	N11	W73	.958	16483	6.9	16	1N				100		DGJ	
ABST	12	0849	0854	0901D	N13	W74	.964	16483	6.8	12D	1N		P	0854	87		DJG	
CATA	12	0850	0850	0905D	N09	W73	.958	16483	6.9	15D	1B	2	P	0850	112			
455 ABST	12	0859	0900	0901D	N16	E30	.559	16505	14.6	20	-N		P	0900	87	1.1	DJ	ZX
GRP80456	12	0950	0956+2	1017	N11	W16	.336	16490	11.2	27	-F				100	1.1	E	
HTPR	12	0950	0956	1017	N11	W17	.349	16490	11.1	27	-F		C	0956	130	1.0	E	
MONT	12	0955E	0958	1016	N11	W16	.336	16490	11.2	21D	-N		C	0958	110			
GRP80457	12	1010+1	1013+2	1022	N13	E09	.365	16496	13.1	12	-B				90	1.0	EH	
CATA	12	1010	1015	1025	N13	E09	.365	16496	13.1	15	-B	1	C	1015	56	.6		
HTPR	12	1011	1013	1022	N18	E09	.350	16496	13.1	11	-N		C	1013	90	.9	E	
MONT	12	1012E	1014	1020	N19	E09	.365	16496	13.1	8D	-B		C	1014	200		H	
458 HTPR	12	1020	1025	1106	N16	E26	.508	16505	14.4	46	-F		C	1025	30	.3	E	ZX
459 HTPR	12	1056	1100	1215	N10	E08	.228	16506	13.1	79	-N		C	1100	30	.3	K	ZX
460 HTPR	12	1103	1111	1132	S14	E69	.937	16518	17.6	29	-F		C	1111	20	.5		ZX
461 HTPR	12	1127	1132	1150	N12	W08	.256	16493	11.3	23	-F		C	1135	40	.4	E	ZX
462 HTPR	12	1136	1141	1200	N16	E26	.508	16505	14.4	24	-F		C	1141	20	.2	E	ZX
463 HTPR	12	1143	1153	1225	S14	E68	.931	16518	17.6	36	-B		C	1153	70	1.6		ZX
464 HTPR	12	1218	1226	1236	S22	E64	.912	16516	17.3	18	-F		C	1226	10	.2		ZX
465 HTPR	12	1342	1349	1355	N17	E25	.503	16505	14.4	13	-F		C	1349	50	.6	E	ZX
466 BIGB	12	1618	1621	1640	S14	W43	.702	16478	9.5	22	-N		C	1621	50	.7		ZX
467 BIGB	12	1618	1623	1721	S25	W65	.922	16476	7.8	63	-N		C	1623	30			ZX
468 BIGB	12	1656	1658	1714	N17	E24	.431	16505	14.5	18	-F		C	1658	30	.3		ZX

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LONG. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.		
GRP80469	12	1704	1705	1735	N11	W24	.446	16493	13.9	31	1N						E	
BIGB	12	1704	1705	1735	N11	W23	.432	16490	11.8	31	1N	1			200	2.2		
HUAN	12	1711E		1713D	N11	W25	.460	16490	10.8	20	-N	1	P	1711	60	.7	E	
GRP80478	12	1714	1714	1738	N11	W79	.983	16483	6.8	16	1N						D	
BIGB	12	1714	1714	1734	N11	W78	.979	16483	6.9	20	1N	1			75			
HUAN	12	1722E		1726	N11	W80	.986	16483	6.7	40	-F	1	P				D	
471 BIGB	12	1716	1718	1743D	N10	W48	.658	16487	9.7	33D	-F		P	1718	40	.5		ZX
472 BIGB	12	1834	1836	1856	N09	W40	.655	16487	9.8	22	-N		C	1836	40	.5		ZX
473 BIGB	12	1900	1901	1911	S03	W66	.914	0	7.8	11	-N		C	1901	50			ZX
474 BIGB	12	1925	1927	1942	S03	W66	.914	0	7.9	17	-N		C	1927	50			ZX
475 BIGB	12	1930	1932	2019	N19	E11	.379	16496	13.6	49	-N		C	1932	60	.6		ZX
476 BIGB	12	2058	2059	2111	N21	E17	.457	16507	14.1	13	-N		C	2059	50	.5		ZX
477 BIGB	12	2105	2111	2131	S03	W66	.914	0	7.9	26	-N		C	2111	70			ZX
478 BIGB	12	2211	2212	2238	S25	W70	.950	16476	7.7	27	-N		C	2212	60			ZX
479 VORO	13	0054	0054	0112	N36	E12	.620	16502	13.3	18	-N		C	0054	45	.6	D	ZX
GRP80483	13	0119+1	0128 0144	0206	N34	E18	.623	0	14.4	47	1F						EL	
PURP	13	0113	0128	0203	N34	E20	.635	0	14.6	44	1F		C					
VORO	13	0128	0144	0203C	N35	E17	.623	0	14.3	49D	2F		C	0144	394	5.2	EL	
481 VORO	13	0252	0252	0254	S18	E33	.599	16513	15.6	2	-N		C	0252	45	.6	D	ZX
482 VORO	13	0252	0300	0325	S30	E04	.434	16503	13.4	33	?F		C	0300	173	2.1	EJ	ZX
	IMP.1 NO : PURP YUNN PALE																	
483 VORO	13	0316	0323	0355	S20	E56	.848	16516	17.3	39	?N		C	0323	161	3.2	J	ZX
	IMP.1 NO : PURP YUNN MITK																	
484 VORO	13	0327	0330	0348	N23	E12	.444	16507	14.3	21	-N		C	0330	81	.9	DK	ZX
485 VORO	13	0331	0334	0353	S17	E30	.556	16519	15.4	22	?B		C	0334	188	2.3	EHG	ZX
	IMP.1 NO : PURP YUNN MITK																	
486 PURP	13	0524	0539	0553	N11	W17	.350	16499	12.0	29	?N		C					ZX
	IMP.1 NO : MITK																	
487 ABST	13	0559E	0600	0605	N24	E06	.428	16496	13.7	6D	-N		P	0600	87	.9	EJ	ZX
488 ABST	13	0559E	0603	0612	S24	E56	.857	16516	17.4	13D	-N		P	0603	87	1.8	DJ	ZX
489 ABST	13	0703	0705	0720	N15	E16	.378	16505	14.5	17	-F		C	0705	148	1.7	EJ	ZX
GRP80490	13	0710+3	0712 0719	0725	N24	E16	.487	16507	14.5	15	-F						FJ	
ABST	13	0710	0712	0722	N24	E15	.479	16507	14.4	12	-F		C	0712	148	1.7	FJ	
PURP	13	0719	0719	0728	N25	E18	.515	16507	14.7	9	-F		C					
491 ABST	13	0737	0739	0755	N10	W33	.567	16490	10.8	18	-N		C	0739	131	1.7	EJ	ZX
GRP80492	13	0738	0741 0806+1	0817	N21	E08	.391	16496	13.9	39	-N				80	.9	EJ	
ABST	13	0738	0741	0805	N20	E03	.356	16436	13.5	27	-N		C	0741	87	.9	DJ	
ABST	13	0746	0749	0805	N21	E06	.381	16496	13.8	19	-F		C	0749	87	.9	DJ	
ABST	13	0800	0807	0821	N24	E07	.431	16496	13.9	21	-N		C	0807	87	.9	DJ	
MONT	13	0802E	0806	0813	N20	E10	.388	16496	14.1	11D	-N		C	0806	80		E	
493 ABST	13	0802	0804	0821	N16	E16	.330	16505	14.5	19	-F		C	0804	87	.9	DJ	ZX
GRP80494	13	0814+6	0833+2 0848+1	0918	N25	E16	.499	16507	14.5	64	1N				250	2.9	FJ	
ABST	13	0814	0848	0905D	N23	E16	.474	16507	14.5	51D	1B	*	P	0848	174	2.1	FJ	
MONT	13	0816	0848	0935	N25	E17	.507	16507	14.6	79	1N	*	C	0848	440			
CATA	13	0820	0830	0940	N24	E15	.479	16507	14.5	80	1B	*	C	0830	422	5.0		
KANZ	13	0825E	0849	0937	N25	E16	.499	16507	14.6	72D	1N	*						
WENO	13	0828E		0855D	N25	E18	.515	16507	14.7	27D	1N	*	C	0850	130	2.3	F	
ATHN	13	0830E	0832	0835D	N27	E19	.484	16507	14.8	5D	-N	*	V	0832	66	.8		
YUNN	13	0849E	0849	0851	N26	E16	.512	16507	14.6	2D	1N	*	C		321	3.8		

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LON. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR. AREA Sq. Deg.	
GRP80495	13	0816+4	0821+1	0830	S13	W78	.979	16508	7.5	14	-N				70		OJ
ARST	13	0816E	0821	0830	S14	W79	.982	16508	7.4	140	1N		P	0821	87		OJ
MONT	13	0820	0822	0830	S13	W77	.975	16508	7.6	10	-N		C	0822	50		O
GRP80496	13	0913+1	0916+1	0925	N10	E36	.607	16514	16.1	12	-N				80	1.0	DG
KANZ	13	0913	0916	0925	N10	E36	.607	16514	16.1	12	-B	2					DG
MONT	13	0914	0917	0925	N11	E36	.611	16514	16.1	11	-F		C	0917	50		DG
ATHN	13	0915E	0916	0930	N10	E41	.671	16514	16.5	150	-B	3	V	0916	114	1.3	
GRP80497	13	0949	0952+0	1004	S13	W74	.963	16508	7.9	15	-F						
KANZ	13	0949	0952	0956	S13	W76	.971	16508	7.7	7	-F	2					
ATHN	13	0950E	0952	0953	S21	W70	.946	16508	8.2	30	-N	3	V	0952	43	1.2	
WEND	13	0951E		1012	S13	W74	.963	16508	7.9	210	-F		C	1000	28		
GRP80498	13	1216+6	1224	1322	S33	W37	.737	16493	10.7	66	-F				110	1.6	E
MONT	13	1216	1230	1230	S30	W49	.819	16493	9.8	140	-N		C	1230	80		E
LVOV	13	1217	1224	1301	S33	W38	.745	16493	10.7	44	1F		C	1224	150	2.3	E
KANZ	13	1222		1322	S34	W37	.744	16493	10.7	60	-F	1					
HTPR	13	1234E		1246	S35	W35	.736	16493	10.9	120	-F		C	1240	30	.4	E
HTPR	13	1302E		1327	S35	W35	.736	16493	10.9	250	-F		C	1310	60	.7	E
	13	1336	1348	NO FLARE PATROL													
GRP80499	13	1352+2	1358	1402	S16	W31	.562	16492	11.3	10	-N						E
HTPR	13	1352		1358	S17	W32	.581	16492	11.2	60	-B		C	1356	120	1.3	E
KANZ	13	1354	1358	1402	S16	W30	.550	16492	11.3	80	-N	1					
	13	1402	1424	NO FLARE PATROL													
500 HTPR	13	1447	1450	1501	S10	E56	.833	16518	17.8	14	-N		C	1450	20	.3		ZX
501 BIGB	13	1618	1627	1638	N11	W90	1.000	16483	6.9	20	-N		C	1627	90			ZX
502 BIGB	13	1744	1745	1821	N21	E53	.830	16515	17.7	37	-B		C	1745	30	.5		ZX
GRP80503	13	1816	1819	1833	N17	E11	.353	16505	14.6	17	-F						
BIGB	13	1816	1813	1833	N18	E11	.367	16505	14.6	17	-F		C	1813	30	.3	
HUAN	13	1817E		1825	N16	E11	.343	16505	14.6	80	-F	1	P				
504 BIGB	13	1917	1920	1939	N25	E07	.446	16507	14.3	22	-N		C	1920	30	.3		ZX
505 BIGB	13	1928	1928	1943	N11	W25	.461	16493	11.3	17	-N		C	1928	30	.3		ZX
GRP80506	13	2054+4	2105+2	2159	S35	W43	.796	16493	10.6	65	2N				440	7.3	FI
CULG	13	2054	2107	2157	S35	W44	.803	16493	10.6	63	2N		P	2107	570	9.7	FI
BIGB	13	2058	2105	2200	S36	W43	.801	16493	10.6	62	1B		C	2105	310	4.4	
GRP80507	13	2300+6	2310+0	2335	S22	E47	.771	16516	17.5	35	-B				110	1.7	
CULG	13	2300	2310	2336	S23	E48	.784	16516	17.6	36	1N		C	2310	140	2.2	
BIGB	13	2306	2310	2333	S22	E47	.771	16516	17.5	27	-B		C	2310	80	1.2	
GRP80508	14	0022>3	0037 0043+0	0056	N26	E05	.457	16507	14.4	34	-N						
PURP	14	0022	0037	0056	N21	E05	.379	16507	14.4	34	1N		P				
CULG	14	0038	0043	0103	N27	E05	.472	16507	14.4	25	-N		C	0043	80	.9	
PURP	14	0042	0043	0047	N26	E07	.463	16507	14.6	5	-N		C				
509 PURP	14	0140	0145	0157	S15	W26	.490	16495	12.1	17	-F		C					ZX
510 CULG	14	0148	0152	0205	N08	W56	.834	16487	9.3	17	-N		C	0152	40	.7		ZX
511 CULG	14	0159	0208	0218	S11	W88	.999	16508	7.5	19	-N		P	0208	30			ZX
512 CULG	14	0218	0224	0245	N08	W56	.834	16487	9.3	27	-N		C	0224	40	.7		ZX
GRP80513	14	0249+1	0253 0301	0309	N11	W43	.699	16493	10.9	20	1N						EU
CULG	14	0249	0301	0429	N11	W43	.699	16490	10.9	100	1B		C	0301	150	2.2	U
PURP	14	0250	0253	0303	N11	W44	.711	16490	10.8	19	1N		C		302	4.3	E
514 PURP	14	0301	0303	0316	N17	E04	.312	16505	14.4	15	-F		C					ZX
GRP80515	14	0301+0	0302+3	0307	N14	W90	1.000	16483	7.4	6	1N						
PURP	14	0301	0305	0351	N14	W90	1.000	16483	7.4	50	2N		C				
CULG	14	0301	0302	0307	N15	W90	1.000	16483	7.4	6	1N		C	0302	60		
516 PURP	14	0345	0352	0400	N08	W59	.861	16487	9.7	15	-F		C					ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LON. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
517 PURP	14	0402	0419	0415	S14	W70	.342	16478	8.9	13	-N		C				ZX
518 CULG	14	0423	0430	0526	N11	W57	.847	16487	9.9	63	-N		C	0430	80	1.5	ZX
519 PURP	14	0608	0608	0636	N18	W08	.348	16496	13.7	28	?N		P				ZX
	IMP.1 NO : MITK																
520 PURP	14	3613	3614	3633	N12	E46	.736		3 17.7	17	?B		C		566	8.2	ZX
	IMP.2 NO : MITK																
521 ATHN	14	0615E	0617	0632	S16	W23	.536	16495	12.1	170	?B	3	V	0617	261	3.1	ZX
	IMP.1 NO : PURP MITK																
522 ATHN	14	0818E	0819	0832	N08	W55	.824	16430	10.2	140	-N	3	V	0819	49	.8	ZX
523 ATHN	14	0838E	0839	0902D	S14	W75	.967	16478	8.7	240	-N	3	V	0839	33	1.2	ZX
524 ATHN	14	0915E	0916	0948	S26	W40	.720	0	11.4	330	-N	3	V	0916	33	.5	ZX
525 ATHN	14	0937E	0939	1020	N13	W04	.247	16505	14.1	430	-N	3	V	0939	82	.8	ZX
GRP80526	14	1036	1043+5	1051	N20	W11	.397	16496	13.6	15	-N				150	1.6	E
LVOV	14	1036	1043	1050	N21	W11	.411	16496	13.6	14	1F		C	1043	200	2.3	E
ATHN	14	1047E	1048	1052D	N19	W12	.331	16496	13.5	50	-N	3	V	1048	98	1.1	
527 HTPR	14	1259	1301	1323	S13	W33	.572	16495	12.1	21	-N		C	1301	120	1.4	E ZX
528 ATHN	14	1310E	1311	1331	N19	W42	.716	16486	11.4	210	?B	3	V	1311	196	2.8	ZX
	IMP.1 NO : HTPR																
	14	1433	1448	NO FLARE PATROL													
529 BIGB	14	1532	1533	1541	N16	E01	.289	16505	14.7	9	-N		C	1533	70	.7	ZX
530 BIGB	14	1532	1533	1551	N11	W51	.788	16430	10.8	19	-B		C	1533	70	1.1	ZX
GRP80531	14	1553	1557	1634	N10	W51	.787	16490	10.8	41	1B						E
BIGB	14	1553	1557	1634	N11	W51	.788	16490	10.8	41	1B		C	1557	160	2.6	
HUAN	14	1604E		1608D	N03	W51	.785	16430	10.8	4D	-F	1	P				E
532 BIGB	14	1637	1638	1653	S17	W32	.583	16495	12.3	13	-N		C	1638	20	.2	ZX
533 BIGB	14	1642	1644	1711	N07	W64	.901	16487	9.9	29	-N		C	1644	40	.9	ZX
534 BIGB	14	1731	1737	1752	S15	W35	.607	16495	12.1	21	-N		C	1737	40	.5	ZX
535 BIGB	14	1833	1802	1822	S14	W80	.985	16478	8.8	22	-B		C	1802	40		ZX
536 BIGB	14	1803	1805	1828	S16	W34	.533	16495	12.2	25	-N		C	1805	40	.5	ZX
537 BIGB	14	1837	1838	1852	N14	W01	.255	16505	14.7	15	-N		C	1838	30	.3	ZX
GRP80538	14	1912	1913 1930	1951	N13	W04	.247	16505	14.5	39	-N						
BIGB	14	1912	1913	1950	N11	W02	.206	16505	14.7	38	-N		C	1913	30	.3	
BIGB	14	1928	1930	1951	N16	W06	.305	16505	14.4	23	-F		C	1933	30	.3	
539 BIGB	14	2020	2022	2041	S15	W90	1.000	16508	8.1	21	-N		C	2022	30		ZX
540 BIGB	14	2055	2100	2123	N08	W67	.323	16487	9.8	28	-N		C	2100	40		ZX
541 BIGB	14	2133	2108	2134	N12	W54	.820	16490	10.8	31	1N		C	2108	140	2.5	ZX
542 BIGB	14	2139	2141	2146	S15	W37	.632	16495	12.1	7	-N		C	2141	50	.6	ZX
543 BIGB	14	2245	2254	2313	N26	W18	.528	16496	13.6	28	-N		C	2254	30	.3	ZX
544 PURP	15	0024	0025	0030	S14	W41	.677	16495	11.9	6	?F		C				ZX
	IMP.1 NO : MITK YUNN																
545 YUNN	15	0331	0332	0343	S13	W38	.637	16495	12.2	9	-F		C		32	.4	ZX
546 YUNN	15	0037	0039	0040	N16	W08	.320	16505	14.4	3	-N		C		161	1.7	E ZX
547 YUNN	15	0043	0053	0056	S13	W42	.686	16495	11.9	13	-N		C		32	.4	ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR. AREA Sq. Deg.		
GRP80548	15	0118+3	0120+1	0138	S14	W40	.665	16495	12.1	20	1F							
YUNN	15	0118	0120	0150	S13	W40	.662	16495	12.1	32	1N		C		161	2.1		
PURP	15	0121	0121	0125	S15	W40	.668	16495	12.1	4	1F		C					
549 YUNN	15	0146	0150	0153	N16	W38	.320	16493	14.5	7	-N		C		161	1.7		ZX
550 YUNN	15	0146	0150	0202	S32	W56	.876	16505	10.9	16	-N		C		48	1.0		ZX
551 YUNN	15	0206	0208	0227	S13	W40	.662	16495	12.1	21	-N		C		48	.7		ZX
552 YUNN	15	0243	0245	0307	S12	W42	.683	16495	12.0	27	-N		C		32	.4		ZX
GRP80553	15	0252+8	0304+0	0323	S32	E06	.524	16500	15.6	31	-F						G	
YUNN	15	0252	0304	0322	S32	E05	.522	16500	15.5	30	-F		C		96	1.1	G	
PURP	15	0300	0304	0323	S33	E07	.542	16500	15.7	23	1F		C					
554 YUNN	15	0330	0332	0340	S13	W42	.686	16495	12.0	10	-F		C		80	1.1		ZX
GRP80555	15	0332+1	0335+0	0340	S18	E31	.573	16516	17.5	8	1N						H	
YUNN	15	0332	0335	0339	S19	E30	.567	16516	17.4	7	1N		C		209	2.5		
PURP	15	0333	0335	0341	S17	E33	.591	16516	17.6	8	1N		C				H	
556 YUNN	15	0400	0402	0405	S12	W42	.683	16495	12.0	5	-N		C		80	1.1		ZX
557 YUNN	15	0451	0454	0458	N26	W13	.478	16507	14.5	7	-N		C		64	.7		ZX
558 YUNN	15	0513	0516	0520	S14	E36	.615	16518	17.9	7	-N		C		48	.6		ZX
559 YUNN	15	0538	0544	0603	N08	E08	.207	16514	15.8	25	-N		C		48	.5		ZX
560 YUNN	15	0607E	0607	0613	N25	W11	.469	16507	14.4	60	-N		C		64	.7		ZX
561 YUNN	15	0646	0648	0658	N23	W11	.441	16507	14.5	12	-N		C		161	1.8		ZX
562 YUNN	15	0758	0801	0805	N25	W12	.475	16507	14.4	7	-N		C		80	.9		ZX
GRP80563	15	0844>9	0857+4	0915	N16	W14	.372	16505	14.3	31	1N				200	2.2	E	
YUNN	15	0844	0857	0916	N15	W14	.353	16505	14.3	32	-N		C		161	1.7	E	
MONT	15	0855	0901	0913	N17	W15	.394	16505	14.2	18	1N		C	0901	250			
	15	0923	0935	NO FLARE PATROL														
	15	1005	1040	NO FLARE PATROL														
	15	1050	1100	NO FLARE PATROL														
	15	1105	1115	NO FLARE PATROL														
	15	1120	1242	NO FLARE PATROL														
	15	1257	1308	NO FLARE PATROL														
	15	1356	1423	NO FLARE PATROL														
GRP80564	15	1523+2	1526+1	1538	N05	W77	.975	16487	9.9	15	-N							
BIGB	15	1523	1526	1542	N06	W78	.979	16487	9.8	19	-B	*	C	1526	50			
HOLL	15	1525	1527	1533	N05	W77	.975	16487	9.9	8	-F	*	C					
565 BIGB	15	1524	1525	1534	S15	W55	.830	16495	11.5	10	-B		C	1525	20	.4		ZX
566 BIGB	15	1625	1627	1643	S15	W55	.830	16495	11.6	18	-B		C	1627	50	.9		ZX
567 BIGB	15	1625	1634	1644	S15	W65	.911	16492	10.8	19	-B	*	C	1634	70			ZX
568 BIGB	15	1626	1627	1639	N38	E03	.163	16514	15.9	13	-N		C	1627	20	.2		ZX
569 BIGB	15	1701	1704	1726	S18	E25	.499	16516	17.6	25	-B		C	1704	50	.6		ZX
570 BIGB	15	1717	1718	1727	N11	W64	.904	16490	10.9	10	-N		C	1718	30	.7		ZX
571 BIGB	15	1733	1737	1758	N19	W31	.593	16496	13.4	28	-N		C	1737	20	.2		ZX
572 BIGB	15	1803	1811	1828	N08	E02	.158	16514	15.3	19	-N		C	1811	20	.2		ZX
573 BIGB	15	1823	1826	1833	S14	W90	1.000	16478	9.3	10	-N		C	1826	30			ZX
GRP80574	15	1842	1844 1303	1911	N19	W28	.558	16496	13.7	29	-B							
BIGB	15	1842	1844	1304	N19	W25	.524	16496	13.3	22	-B		C	1844	20	.2		
BIGB	15	1900	1903	1911	N20	W31	.633	16496	13.5	11	-N		C	1903	30	.4		
575 BIGB	15	1937	1942	2000	S17	E90	1.000	16529	22.6	23	-N		C	1942	80			ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LONG. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
576 BIGB	15	1933	1942	2016	S18	E20	.433	16516	17.3	37	-B		C	1942	40	.4		ZX
577 BIGB	15	2035	2006	2022	N09	E01	.172	16514	15.9	17	-N		C	2006	20	.2		ZX
578 BIGB	15	2018	2021	2052	N21	W26	.553	16507	13.3	34	-F		C	2021	50	.5		ZX
579 BIGB	15	2018	2023	2134	S16	E90	1.000	16529	22.6	46	-B	*	C	2023	140			ZX
580 BIGB	15	2055	2056	2136	N19	W32	.684	16496	13.5	41	-N		C	2056	40	.5		ZX
581 BIGB	15	2125	2127	2147	N17	E27	.531	16515	17.3	22	-N		C	2127	40	.5	G	ZX
582 BIGB	15	2139	2143	2150	S28	W90	1.000	0	9.2	11	-N		C	2143	80			ZX
583 BIGB	15	2144	2147	2154	S23	E23	.522	16516	17.6	10	-F		C	2147	50	.6		ZX
584 BIGB	15	2329	2330	2347D	N25	W22	.552	16507	14.3	18D	-N		P	2330	90	1.0		ZX
GRP80585	16	0006+5	0022+4	0033	N22	W24	.542	16507	14.2	27	-N						EHJ	
VORO	16	0006	0022	0034	N22	W23	.532	16507	14.3	28	-N		C	0028	134	1.6	EHJ	
PURP	16	0011	0026	0032	N23	W25	.562	16507	14.1	21	1N		P					
586 YUNN	16	0050	0102	0115	S19	E80	.985	16529	22.0	25	-N		C		16			ZX
587 PURP	16	0203	0223	0237	N23	W25	.562	16507	14.2	34	-F		C					ZX
588 VORO	16	0254	0255	0303	S15	W53	.813	16495	12.1	6	-F		C	0255	63	1.1	O	ZX
589 PURP	16	0325	0325	0335	S16	E19	.407	16516	17.6	10	-F		P					ZX
590 VORO	16	0326	0329	0336	N22	W26	.563	16507	14.2	10	-N		C	0329	125	1.5	DJ	ZX
591 YUNN	16	J546	0551	0608	N15	W27	.517	16505	14.2	14	?N		C		321	3.7		ZX
	IMP.1	NO	MITK	TACH	CULG													
592 YUNN	16	J635	0639	J625	N16	W26	.512	16505	14.3	20	-N		C		161	1.8		ZX
GRP80593	16	0637>9	0643	0706	S15	W54	.820	16495	12.2	29	1N						EJ	
			0653+2															
ABST	16	0637	0643	0708	S14	W54	.819	16495	12.2	31	1N		C	0643	192	3.4	EJ	
ATHN	16	J650	0655	07060	S15	W55	.829	16495	12.2	160	-N	3	S	0655	66	1.2		
YUNN	16	0653E	0653	0701	S15	W53	.810	16495	12.3	80	1N		C		209	3.6		
594 ABST	16	0706E	0706	0709D	N23	W28	.532	16507	14.2	30	-N		P	0706	70	.9	DJ	ZX
595 ABST	16	J749	0751	0753	N23	W29	.603	16507	14.2	4	-N		C	0751	61	.8	DJ	ZX
GRP80596	16	0815>3	0833+5	0850	N16	W26	.512	16505	14.4	35	-F						FJK	
ABST	16	0815	0838	0844	N17	W29	.556	16505	14.2	29	-F		C	0838	122	1.5	FJK	
YUNN	16	J837	0843	J856	N16	W24	.487	16505	14.6	19	-F		C		48	.5		
GRP80597	16	0826+7	0827	0841	N24	W27	.591	16507	14.3	15	-N				60	.7	EJ	
			0835+2															
ABST	16	0826E	0827	0837	N24	W26	.581	16507	14.4	110	-F		P	0827	105	1.3	EJ	
ABST	16	J831E	0835	J843	N24	W30	.621	16507	14.1	90	-N		P	0835	79	1.0	DJ	
YUNN	16	0833	0837	0842	N24	W27	.591	16507	14.3	9	-N		C		48	.6		
GRP80598	16	0845+4	0847+2	0856	N19	W38	.673	16496	13.5	11	-N						EJ	
ISTA	16	0845		08570	N19	W37	.662	16496	13.6	120	-F						E	
ABST	16	0847E	0847	08530	N19	W38	.673	16496	13.5	60	-N		P	0847	140	1.9	EJ	
KANZ	16	0849	0849	0854	N19	W38	.673	16496	13.5	5	-N	1						
GRP80599	16	0900+2	0902+1	0914	S19	E73	.983	16529	22.3	14	-N							
YUNN	16	0900	0903	J915D	S20	E80	.986	16529	22.4	150	-N		C		16			
KANZ	16	0902	0902	0913	S18	E79	.982	16529	22.3	11	-N	1						
600 KANZ	16	1006	1008	1020	N24	W28	.601	16507	14.3	14	-N	1						ZX
	16	1316	1333	NO FLARE PATROL														
	16	1403	1429	NO FLARE PATROL														
GRP80601	16	1615+1	1618	1643	N15	W31	.568	16505	14.4	34	-N						E	
BIGB	16	1615	1618	1655	N15	W31	.568	16505	14.4	40	-B		C	1618	90	1.0		
HUAN	16	1616		1642	N15	W31	.568	16505	14.4	26	-N	1	C				E	
602 BIGB	16	1723	1726	1746	N04	W28	.476	16511	14.6	23	-N		C	1726	50	.6	G	ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP80603	16	1815+1	1819	1840	N03	W27	.458	16511	14.7	25	-N				50	.6	EG	
BIGB	16	1815	1819	1851	N04	W28	.476	16511	14.7	36	-N		C	1819	40	.5	G	
HUAN	16	1816		1829	N03	W27	.458	16511	14.7	13	-N	1	C	1818	60	.7	E	
604 BIGB	16	1937	1840	1302	S13	W62	.887	16435	12.1	25	-B		C	1840	30	.7	D	ZX
GRP80605	16	2031+1	2033+1	2047	S11	E09	.232	16518	17.5	16	-F				45	.5		
CULG	16	2031	2034	2035D	S11	E09	.232	16518	17.5	4D	-F		P	2034	60	.6		
BIGB	16	2032	2033	2047	S12	E09	.245	16518	17.5	15	-N		C	2033	30	.3		
GRP80606	16	2120+3	2124+3	2138	N23	W36	.675	16507	14.2	18	-B				80	1.1		
CULG	16	2120	2124	2147	N23	W35	.665	16507	14.3	27	-N		C	2124	120	1.6	T	
BIGB	16	2123	2125	2135	N23	W36	.675	16507	14.2	12	-B		C	2125	60	.8		
HOLL	16	2123	2127	2138	N19	W43	.728	16507	13.7	15	-B	3	C		62			
607 CULG	16	2126	2128	2142	S18	E79	.982	16529	22.8	16	-N		C	2128	40			ZX
608 CULG	16	2132U	2203	2240	N04	W30	.506	16511	14.6	68D	-F		C	2203	60	.9		ZX
GRP80609	16	2143+3	2147+1	2202	S11	E08	.221	16518	17.5	19	-N							
CULG	16	2143	2148	2207	S11	E08	.221	16518	17.5	24	-N		C	2148	100	1.0		
BIGB	16	2146	2147	2157	S11	E09	.232	16518	17.6	11	-N		C	2147	30	.3		
610 CULG	16	2224	2225	2235	N18	W40	.691	16505	13.9	11	-F		C	2225	60	.8		ZX
GRP80611	16	2232+6	2240+1	2245D	N24	W34	.661	16507	14.4	13	-N				50	.7		
CULG	16	2232	2241	2247	N25	W37	.698	16507	14.2	15	-N		C	2241	70	1.0	T	
CULG	16	2237	2304	2321	N23	W28	.592	16507	14.8	44	-F		C	2304	80	1.0		
BIGB	16	2238	2240	2245	N24	W36	.682	16507	14.2	7	-B		C	2240	30	.4		
GRP80612	16	2245+1	2248+1	2253	N15	W33	.593	16505	14.5	14	-N				40	.5		
BIGB	16	2245	2248	2300	N16	W33	.598	16505	14.5	15	-B		C	2248	40	.5		
HOLL	16	2246	2249	2258	N15	W34	.605	16505	14.4	12	-N	3	C		39			
GRP80613	16	2317+1	2320+6	0052	N03	W31	.513	16511	14.6	35	-B							
CULG	16	2317	2326	0052	N04	W32	.535	16511	14.6	95	1N		C	2326	300	3.5		
BIGB	16	2318	2320	2344D	N03	W31	.519	16511	14.6	26D	-B		P	2320	60	.8		
614 CULG	16	2336	2349	0115	S04	W38	.617	16498	14.1	39	-F		C	2349	100	1.3		ZX
615 CULG	16	2352	2414	0026	S20	E08	.351	16516	17.6	34	-F		C	2414	100	1.0		ZX
GRP80616	16	2356+2	2358+1	0006	N23	W37	.685	16507	14.2	10	-N				110	1.5	D	
CULG	16	2356	2358	0009	N25	W38	.709	16507	14.1	13	-N		C	2358	100	1.4	T	
VORO	16	2358	2359	0003	N22	W37	.673	16507	14.2	5	-N		C	2359	134	1.9	D	
617 CULG	17	0025	0027	0036	N24	W37	.693	16507	14.2	11	-F		C	0027	60	.8		ZX
618 VORO	17	0036	0038	0040	S18	E72	.954	16523	22.4	4	-F		C	0038	125		EG	ZX
619 CULG	17	0037	0043	0047	S13	W65	.909	16495	12.2	10	-F		C	0043	80	1.8	F	ZX
620 CULG	17	0043	0044	0049	S16	E70	.943	16529	22.3	6	-F		C	0044	50			ZX
621 VORO	17	0142	0143	0146	S18	E72	.954	16523	22.5	4	-F		C	0143	81		DG	ZX
622 YUNN	17	0142	0200	0207	S24	E06	.400	16516	17.5	25	-N		C		80	.9		ZX
623 CULG	17	0147	0152	0215	S19	W57	.853	16509	12.8	28	-F		C	0152	100	2.0	FKT	ZX
GRP80624	17	0205+2	0206+2	0214	S18	E72	.954	16529	22.5	9	-F				50		DGL	
CULG	17	0205	0206	0214	S18	E78	.979	16529	22.9	9	1F		C	0206	60			
YUNN	17	0205	0207	0210	S21	E71	.950	16529	22.4	5	-N		C		16			
VORO	17	0207	0208	0214	S18	E72	.954	16523	22.5	7	-F		C	0208	45		DGL	
625 CULG	17	0324	0327	0336	N24	W29	.612	16507	15.0	12	-F		C	0327	150	1.9		ZX
GRP80626	17	0400+9	0412+3	0430	S18	W57	.852	16509	12.9	30	-F				25	.5	K	
CULG	17	0408	0412	0424U	S13	W58	.862	16503	12.8	24D	-N		C	0412	20	.4	TK	
YUNN	17	0413	0415	0433	S18	W56	.843	16509	13.3	17	-F		C		32	.6		
627 CULG	17	0424	0426	0430	N19	W50	.799	16496	13.4	6	-F		C	0426	90	1.5		ZX
628 CULG	17	0434	0436	0450	N18	W50	.736	16496	13.4	16	-N		C	0436	80	1.3		ZX
629 CULG	17	0441	0442	0509	S20	W59	.871	16509	12.8	28	-F		C	0442	70	1.4	TK	ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX WEB. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONG	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR. AREA Sq. Deg.		
630 CULG	17	0516	0524	0540	N20	W46	.763	16436	13.8	24	-N		C	0524	80	1.0	F	ZX
631 CULG	17	0554	0555	0604U	N24	W40	.722	16507	14.2	100	-F		C	0555	90	1.3		ZX
632 ATHN	17	0613E	0615	0634	S16	W78	.943	16495	12.8	210	-N	3	S	0615	98	2.3		ZX
633 ABST	17	0835E	0836	0841D	S16	E41	.683	16525	20.4	60	-F		P	0836	87	1.2	DJ	ZX
634 ABST	17	0858E	0903	0904D	N17	E59	.874	0	21.8	60	?F		P	0900	96	2.2	E	ZX
	IMP.1 NO : MONT																	
	17	0945	0958	NO FLARE PATROL														
	17	1436	1444	NO FLARE PATROL														
635 BIGB	17	1516E	1522U	1654D	S17	E64	.905	16523	22.4	380	?N		P	1522	110	2.5		ZX
	IMP.1 NO : HOLL RAMY																	
636 BIGB	17	1538	1541	1612	S17	W03	.312	16516	17.8	34	-N		C	1541	140	1.5		ZX
637 BIGB	17	1608	1609	1620	S12	W73	.957	16495	12.2	12	-B		C	1609	70			ZX
	17	1709	1721	NO FLARE PATROL														
GRP80638	17	1856+2	1903+1	1923	N10	W25	.458	16514	15.3	27	-B				70	.8	F	
HUAN	17	1856		1903D	N08	W25	.447	16514	15.9	70	-N	1	P	1859	40	.5		
HOLL	17	1857	1903	1922	N10	W26	.472	16514	15.8	25	-B	3	C		99		F	
BIGB	17	1858	1904	1923	N11	W25	.464	16514	15.9	25	-B		C	1304	70	.8		
639 BIGB	17	2015	2021	2041	N15	W47	.757	16505	14.3	26	-N		C	2021	60	.9		ZX
640 CULG	17	2049	2051	2053	N17	W49	.783	16505	14.2	4	-F		C	2051	60	.8		ZX
641 BIGB	17	2153	2159	2217	N05	W46	.724	16511	14.5	24	-F		C	2159	30	.4	G	ZX
642 CULG	17	2232	2233	2237	S07	E12	.230	16522	18.8	5	-F		C	2233	30	.3		ZX
GRP80643	17	2248+3	2251+1	2258	S21	W05	.349	16516	17.6	10	-N				70	.7		
CULG	17	2248	2251	2256	S21	W06	.354	16516	17.5	8	-N		C	2251	100	1.0		
BIGB	17	2251	2252	2253	S21	W05	.349	16516	17.6	8	-N		C	2252	50	.5		
644 CULG	18	0008	0011	0018	N18	W50	.797	16505	14.3	18	-N		C	0011	60	1.0		ZX
645 CULG	18	0107	0116	0132	S03	E38	.624	0	28.3	25	-F		C	0116	60	.8	G	ZX
646 CULG	18	0148	0157U	0213U	S16	E62	.889	16529	22.7	220	-N		C	0157	80	1.6	HT	ZX
647 CULG	18	0230	0237	0250	N13	W69	.939	16506	12.9	20	-F		C	0237	30			ZX
GRP80648	18	0241+3	0243+2	0250	S15	E61	.881	16523	22.7	9	-F				80	1.7	EH	
CULG	18	0241	0243	0251	S15	E62	.888	16529	22.8	10	-N		C	0243	60	1.2	HT	
VORO	18	0244	0245	0248	S15	E60	.873	16529	22.6	4	-F		C	0245	99	2.0	EH	
GRP80649	18	0313>3	0340 0351	0401	N14	W53	.816	16505	14.2	48	-N						EJK	
CULG	18	0313	0343U	0407	N14	W53	.816	16505	14.2	54	1F		C	0340	140	2.4	K	
VORO	18	0350	0351	0354	N15	W54	.827	16505	14.1	4	-N		C	0351	90	1.6	EJ	
GRP80650	18	0328+4	0332+0	0333	S15	E60	.873	16523	22.6	11	1F				120	2.5	DH	
CULG	18	0328	0332	0339	S15	E61	.881	16529	22.7	11	1N		C	0332	100	2.0	T	
VORO	18	0332	0332	0338	S16	E60	.874	16523	22.6	6	1F		C	0332	152	3.1	DH	
651 CULG	18	0412	0535U	0629D	N18	W08	.355	16515	17.6	137D	?F		C	0535	240	2.6	SF	ZX
	IMP.1 NO : MITK YUNN																	
652 CULG	18	0423	0431	0444	S15	E61	.881	16529	22.8	21	-N		C	0431	60	1.2	T	ZX
653 YUNN	18	0447E	0447	0500	N11	W30	.534	16514	15.9	13D	-N		C		32	.4		ZX
GRP80654	18	0540+0	0542+3	0603	N11	W31	.547	16514	15.9	23	-N				130	1.6	DJ	
CULG	18	0540	0545	0557	N11	W32	.561	16514	15.8	17	-N		C	0545	100	1.2	T	
YUNN	18	0540	0542	0603	N12	W31	.552	16514	15.9	23	-B		C		161	1.9		
ABST	18	0600E	0600	0606D	N11	W30	.534	16514	16.0	6D	-F		P	0600	105	1.3	BDJ	
655 YUNN	18	0734	0755	0822	N11	W31	.547	16514	16.0	48	-N		C		64	.8		ZX
656 YUNN	18	0835	0845	0848D	N19	W53	.827	16505	14.4	13D	-N		C		16	.3		ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP80657	18	0930+8	0951+0	1015	N11	W34	.587	16514	15.8	45	-F							
HTPR	18	0930	0951	1015	N10	W35	.596	16514	15.8	45	-F	*	C	0951	30	.4		
YUNN	18	0938	0951	0956D	N12	W33	.579	16514	15.9	180	-N	*	C		161	2.0		
658 YUNN	18	0932	0942	0948	N19	W54	.836	16505	14.3	16	-F		C		16	.3		ZX
659 HTPR	18	1021	1022	1035	N21	E17	.466	16524	19.7	14	-F		C	1022	30	.3	E	ZX
660 HTPR	18	1100	1106	1130	S20	W20	.455	16516	17.0	30	-N		C	1106	40	.4	E	ZX
GRP80661	18	1315+7	1408	1424	S16	E55	.830	16523	22.7	69	-N						D	
HTPR	18	1315	1408	1424	S17	E55	.832	16529	22.7	69	-N		C	1408	20	.3		
HUAN	18	1322		1327D	S15	E55	.829	16529	22.7	5D	-F	1	P				D	
GRP80662	18	1400	1410	1427	N09	W36	.606	16514	15.9	27	-N						E	
HTPR	18	1400	1410	1425	N10	W37	.623	16514	15.8	25	-N		C	1410	50	.6	E	
HUAN	18	1424E		1428	N09	W35	.593	16514	16.0	40	-F	1	P				E	
GRP80663	18	1426+3	1428+3	1438	S17	E53	.813	16529	22.6	12	-N				35	.6	D	
HTPR	18	1426	1428	1442	S18	E54	.825	16529	22.7	16	-B		C	1428	40	.7		
HUAN	18	1429	1431	1433	S16	E53	.811	16523	22.6	4	-N	1	C	1431	25	.4	D	
GRP80664	18	1455+3	1458	1509	S17	E49	.774	16529	22.3	14	-N				50	.8		
HTPR	18	1455	1458	1510	S19	E47	.758	16529	22.1	15	-N		C	1458	60	.8		
HUAN	18	1458		1508	S15	E52	.800	16523	22.5	10	-N	1	C	1503	40	.7		
665 BIGB	18	1519	1524	1542	S12	W90	1.000	16495	11.9	23	-N		C	1524	60			ZX
GRP80666	18	1526+0	1527	1537	S15	E50	.779	16529	22.4	11	-N							
BIGB	18	1526	1527	1544	S15	E50	.779	16523	22.4	18	1N		C	1527	150	2.4		
HUAN	18	1526		1529	S15	E50	.779	16523	22.4	3	-F	1	C					
667 BIGB	18	1709	1712	1713D	S12	W90	1.000	16495	12.0	4D	-N		P	1712	60			ZX
668 BIGB	18	1801	1804	1813	N27	E90	1.000	0	25.5	12	-F		C	1804	40			ZX
GRP80669	18	1809+6	1815+0	1834	N08	W38	.629	16514	15.9	25	-F				25	.3		
BIGB	18	1809	1815	1833	N10	W37	.623	16514	16.0	24	-N		C	1815	30	.4		
HOLL	18	1815	1815	1835D	N07	W39	.640	16514	15.8	200	-F	3	C		20			
670 BIGB	18	1814	1815	1819	S25	W56	.857	16510	14.6	5	-N		C	1815	40	.7		ZX
671 BIGB	18	1843	1844	1901	N27	E90	1.000	0	25.5	21	-F		C	1844	90			ZX
672 BIGB	18	1902	1906	2042	N10	W38	.636	16514	15.9	100	?B		C	1306	160	2.1		ZX
	IMP.1 NO : PALE																	
673 CULG	18	2112E	2122	2152	N11	W40	.664	16514	15.9	40D	-N		C	2122	120	1.6		ZX
674 CULG	18	2151	2153	2203	N13	W63	.899	16505	14.2	12	-F		C	2153	20			ZX
GRP80675	18	2221>9	2226	2255	N23	W59	.885	16507	14.5	34	-N							
			2244															
CULG	18	2221	2226	2259	N23	W63	.912	16507	14.2	38	-N		C	2226	60	.8		
HOLL	18	2243	2244	2250	N23	W56	.863	16507	14.7	7	-N	3	C		20			
676 CULG	18	2339	2342	2353	N09	W41	.671	16514	15.9	14	-N		C	2342	40	.5	T	ZX
677 CULG	18	2340	2343	2351	N14	W80	.987	16506	13.0	11	-F		C	2343	20			ZX
678 YUNN	19	0041	0046	0100	N10	W41	.674	16514	16.0	19	-N		C		129	1.7		ZX
GRP80679	19	0111+2	0122+3	0150	N10	W40	.661	16514	16.0	39	-F				100	1.3		
CULG	19	0111U	0122	0147U	N13	W40	.661	16514	16.0	36D	-F		C	0122	80	1.1		
YUNN	19	0113	0125	0150	N10	W41	.674	16514	16.0	37	-N		C		129	1.7		
GRP80680	19	0123	0126+2	0152	N15	W63	.902	16505	14.3	29	2B				240	5.5		
CULG	19	0123	0126	0202	N15	W64	.909	16505	14.3	39	1B		C	0126	160	3.6		
YUNN	19	0125E	0128	0142	N15	W63	.902	16505	14.3	17D	2B		C		321	7.3		
GRP80681	19	0150>9	0208+2	0219	S23	W63	.904	16510	14.4	29	-F				50	1.2		
YUNN	19	0150	0209	0218	S22	W62	.896	16510	14.4	28	-N		C		64	1.5		
CULG	19	0203	0213	0223	S24	W64	.912	16513	14.3	17	-F		C	0210	40	.9		
GRP80682	19	0244	0314	0351	N10	W42	.686	16514	16.0	67	-N							
			0328															
YUNN	19	0244	0314	0344	N10	W42	.686	16514	16.0	60	1N		C		161	2.2		
CULG	19	0251E	0328	0358	N10	W42	.686	16514	16.0	67D	-N		C	0328	80	1.1	T	

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
683 YUNN	19	0505	0507	0521	S36	W09	.175	16522	18.5	16	-N		C		48	.5	ZX
GRP80684	19	0603+2	0607+1	0613	N10	W43	.698	16514	16.0	10	-F				110	1.5	D
ABST	19	0603	0607	0614	N09	W44	.708	16514	16.0	11	-F		C	0607	87	1.2	D
YUNN	19	0605	0608	0611	N11	W43	.701	16514	16.0	6	-N		C		129	1.8	
685 YUNN	19	0705	0708	0712	N10	W44	.710	16514	16.0	7	-N		C		113	1.6	ZX
686 ABST	19	0746E	0752	0759	N16	W70	.947	16505	14.1	13D	?F		P	0752	201		F ZX
	IMP.1 NO : YUNN				CULG	PURP											
687 ABST	19	0748	0750	0804	N09	W45	.720	16514	16.0	16	-F		C	0758	87	1.3	D ZX
688 YUNN	19	0826	0833	0843	S37	W11	.213	16522	18.5	14	-N		C		80	.8	ZX
GRP80689	19	0924+1	0927+2	0936	S12	W28	.496	16518	17.3	12	-F						E
HTPR	19	0924	0927	0937	S13	W28	.501	16518	17.3	13	-F		C	0927	20	.2	E
YUNN	19	0925	0929	0935	S12	W28	.496	16518	17.3	10	-N		C		80	.9	
690 HTPR	19	0931	0931	0945	S08	W11	.221	16522	18.6	14	-F		C	0931	10	.1	ZX
691 HTPR	19	1005	1015	1038	S13	E42	.704	16523	22.6	33	-N		C	1015	20	.3	ZX
692 HTPR	19	1019	1026	1041	N29	W32	.507	16523	19.3	22	-B		C	1026	50	.6	E ZX
	19	1121	1206	NO FLARE PATROL													
693 HTPR	19	1300E		1308	S13	E41	.693	16523	22.6	8D	-F		C	1302	20	.3	ZX
	19	1353	1358	NO FLARE PATROL													
	19	1421	1426	NO FLARE PATROL													
	19	1430	1447	NO FLARE PATROL													
	19	1453	1506	NO FLARE PATROL													
	19	1838	1947	NO FLARE PATROL													
	19	1950	1957	NO FLARE PATROL													
694 CULG	19	2001	2010	2036	N23	E00	.413	16524	13.9	35	-N		C	2010	120	1.3	ZX
	19	2056	2102	NO FLARE PATROL													
	19	2103	2108	NO FLARE PATROL													
	19	2110	2120	NO FLARE PATROL													
695 CULG	19	2156	2217	2316U	S15	E36	.616	16523	22.6	80D	2B		C	2217	680	8.8	Z ZX
696 CULG	19	2231	2239	2335	S39	E82	.990	16539	26.1	34	1F		C	2239	80		ZX
697 CULG	19	2254	2301	2318	S41	E63	.934	0	24.7	24	-F		C	2301	60	1.5	G ZX
GRP80698	20	0021+1	0024+4	0035	N08	W55	.826	16514	15.9	14	1N				180	3.2	
CULG	20	0021	0024	0037	N08	W55	.826	16514	15.9	16	1N		C	0024	190	3.4	F
VORO	20	0022	0026	0035	N08	W55	.826	16514	15.9	13	1N		C	0026	233	4.1	E
YUNN	20	0025E	0029	0035	N11	W52	.801	16514	16.1	10D	1B		C		129	2.0	
699 YUNN	20	0029	0055	0110	S16	E29	.530	16529	22.2	41	?F		C		193	2.3	ZX
	IMP.1 NO : CULG				MITK	VORO											
700 YUNN	20	0154E	0156	0203	S17	E31	.562	16523	22.4	3D	?F		C		321	3.9	ZX
	IMP.1 NO : CULG				VORO	PALE	MITK										
701 YUNN	20	0205	0219	0241	S17	E32	.575	16529	22.5	36	?F		C		177	2.1	ZX
	IMP.1 NO : CULG				VORO	MITK	PALE										
702 YUNN	20	0236	0245	0253	N14	W55	.835	16514	16.0	14	-F		C		32	.6	ZX
GRP80703	20	0249+1	0256+1	0313	S12	W37	.618	16518	17.3	24	-N				120	1.5	
CULG	20	0249	0257E	0310	S13	W37	.621	16518	17.3	21	-N		P	0257	140	1.8	
YUNN	20	0250	0256	0315	S11	W37	.615	16518	17.3	25	-N		C		113	1.4	
704 CULG	20	0303	0307U	0323U	S17	E34	.600	16529	22.7	20D	?F		C	0307	200	2.4	ZX
	IMP.1 NO : VORO				YUNN	MITK	PALE										
GRP80705	20	0543E	0611+4 0714	0750	S17	E32	.575	16529	22.6	127	1N						F
CULG	20	0543U	0611U	0648D	S16	E33	.582	16529	22.7	65D	2N		P	0611	600	7.2	F
ATHN	20	0610E	0615	0750	S20	E32	.532	16523	22.7	100D	1B	3	V	0615	261	3.1	
YUNN	20	0656E	0714	0829	S17	E29	.537	16529	22.5	93D	1N		C		353	4.2	

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq Deg.		
706 YUNN	20	0658	0659	0701	S32	W05	.513	16533	19.9	3	-N		C		64	.7		ZX
707 YUNN	20	0800	0803	0806	S07	W24	.415	16533	18.5	6	-N		C		64	.7		ZX
708 YUNN	20	0833	0833	0839	S31	W07	.503	16522	19.8	9	-F		C		48	.6		ZX
GPP80709	20	0811+1	0816+0	0822	S07	W24	.415	16522	18.5	11	-N				40	.4	E	
YUNN	20	0811	0816	0823	S07	W24	.415	16522	18.5	12	-B		C		48	.5		
HTPR	20	0812	0816	0820	S07	W25	.431	16522	18.5	8	-F		C	0816	30	.3	E	
710 YUNN	20	0844	0855	0906D	S31	W06	.500	16533	19.9	22D	-F		C		48	.6		ZX
711 YUNN	20	0848	0855	0906	S07	W24	.415	16522	18.6	18	-F		C		64	.7		ZX
GRP80712	20	0926	0933+5	1001	S17	E27	.511	16529	22.4	35	-N						E	
HTPR	20	0926	0930	1001	S15	E27	.498	16529	22.4	35	-B		C	0930	100	1.1	E	
ATHN	20	0930E	0932	1013	S18	E25	.433	16523	22.3	43D	-N	3	V	0932	196	2.3		
YUNN	20	0932E	0935	0945	S17	E27	.511	16529	22.4	13D	1N		P		353	4.1		
GRP80713	20	0932+3	0942+3 0952	1023	S07	W25	.431	16522	18.5	51	-N						E	
YUNN	20	0932E	0945	0945D	S07	W24	.415	16522	18.6	13D	-B		P		112	1.2		
HTPR	20	0935	0942	1002	S08	W25	.434	16522	18.5	27	-N		C	0942	40	.4	E	
HTPR	20	0944	0952	1023	S35	W26	.441	16522	18.5	39	-F		C	0952	20	.2		
714 ATHN	20	1010E	1012	1013D	S32	W12	.538	16533	19.5	3D	-N	3	V	1012	131	1.5		ZX
715 ATHN	20	1015E	1017	1018D	S13	E85	.336	16541	26.8	3D	-N	3	V	1017	66	3.3		ZX
716 HTPR	20	1027	1032	1045	S08	W25	.434	16522	18.6	18	-F		C	1032	40	.4	E	ZX
717 HUAN	20	1325		1348	S08	W26	.443	16522	18.6	23	-F	1	C					ZX
718 HUAN	20	1338	1339	1342	S15	E27	.498	16529	22.6	4	-F	1	C	1339	25	.3	D	ZX
719 HTPR	20	1405F		1408	S13	E25	.458	16523	22.5	3D	-F		C	1405	20	.2		ZX
720 HTPR	20	1504	1508	1513	S18	E30	.556	16523	22.9	15	-B		C	1508	40	.4	E	ZX
721 BIGB	20	1528	1529	1547	S08	W28	.479	16522	18.5	19	-N		C	1529	30	.4		ZX
722 BIGB	20	1551	1556	1641	S23	W44	.740	16516	17.4	50	?N		C	1556	150	2.1		ZX
	IMP.1 NO 1 HOLL																	
GRP80723	20	1551>9	1607+5 1743	1748D	S16	E25	.478	16523	22.5	117	1B						EU	
HOLL	20	1551	1607	1717	S14	E26	.478	16523	22.6	86	1B	*	C		436		UDE	
BIGB	20	1601	1612	1859	S16	E25	.478	16523	22.5	178	1B	*	C	1612	210	2.3		
HUAN	20	1622F		1636D	S16	E25	.478	16529	22.6	14D	-N	*	P	1628	160	1.9	E	
HOLL	20	1737	1743	1748	S11	E22	.404	16523	22.4	11	-F	*	C		25			
724 HOLL	20	1635	1612	1627	S37	W26	.446	16522	18.7	22	-F	3	C		34			ZX
725 BIGB	20	1710	1711	1721	N20	W90	1.000	16505	14.0	11	-B		C	1711	70			ZX
GRP80726	20	1728>3	1743+1	1751	S08	W28	.479	16522	18.6	23	-N				45	.5		
BIGB	20	1728	1743	1753	S09	W30	.512	16522	18.5	25	-B		C	1743	50	.6		
HOLL	20	1738	1744	1748	S07	W27	.461	16522	18.7	10	-F	3	C		44			
727 BIGB	20	1758	1759	1822	S09	W30	.512	16522	18.5	24	-B		C	1759	50	.6		ZX
728 BIGB	20	1835	1837	1850	S09	W30	.512	16522	18.5	15	-B		C	1837	40	.5		ZX
729 BIGB	20	1853	1856	1915	S09	W30	.512	16522	18.5	22	-B		C	1856	50	.6		ZX
GRP80733	20	1945+0	1947+0	2004	S07	W31	.521	16522	18.5	19	-B							
BIGB	20	1945	1947	2009	S08	W31	.523	16522	18.5	24	1B		C	1947	200	2.4		
HOLL	20	1945	1947	1958	S06	W31	.513	16522	18.5	13	-N	3	C		73			
731 HOLL	20	2001	2303	2311	S15	E24	.458	16529	22.6	10	-F	3	C		26			ZX
GRP80732	20	2016+8	2027+2	2044	S07	W30	.506	16522	18.6	28	-B				90	1.0	F	
CULG	20	2016	2027	2044U	S07	W31	.521	16522	18.5	28D	-N	*	C	2027	130	1.4	FT	
BIGB	20	2018	2023	2050	S03	W30	.512	16522	18.6	32	-B	*	C	2029	70	.8		
HOLL	20	2324	2327	2340	S37	W29	.491	16522	18.7	16	-B	*	C		67			
733 BIGB	20	2019	2021	2027	S32	W12	.538	16533	19.9	8	-N		C	2021	40	.4		ZX

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP80734	20	2023+3	2027+1	2036	S16	E25	.478	16523	22.7	13	-B				70	.8		
HOLL	20	2023	2328	2335	S13	E25	.458	16529	22.7	12	-B	3	C		68			
CULG	20	2025	2027	2036	S16	E25	.478	16529	22.7	11	-N		C	2027	150	1.7		
BIGB	20	2026	2027	2050	S17	E25	.486	16529	22.7	24	-B		C	2027	60	.7		
735 BIGB	20	2053	2054	2116	S09	W30	.512	16522	18.6	23	-B		C	2054	80	1.0		ZX
736 BIGB	20	2058	2059	2114	S32	W12	.538	16533	20.0	16	-N		C	2059	40	.4		ZX
737 BIGB	20	2145	2151	2213	S18	E25	.433	16523	22.8	34	-B		C	2151	20	.2		ZX
738 BIGB	20	2225	2236	2300	S16	E21	.427	16529	22.5	350	-B		P	2236	60	.7		ZX
GRP80739	20	2309+0	2313+1	2324	S16	E22	.440	16523	22.6	15	-N							
BIGB	20	2309	2313	2321	S17	E23	.460	16523	22.7	12	-B		C	2313	50	.6		
CULG	20	2309	2314	2326	S16	E22	.440	16529	22.6	17	1F		C	2314	290	3.2		
740 BIGB	20	2329	2331	2337	S08	W35	.580	16522	18.4	8	-B		C	2331	50	.6		ZX
741 BIGB	20	2332	2338	2344?	S13	E21	.403	16523	22.6	12?	-N		P	2338	60	.7		ZX
GRP80742	21	0033	0050	0112	S06	W33	.548	16522	18.5	39	1N							
YUNN	21	0033	0050	0116	S05	W34	.561	16522	18.5	43	1N		C		274	3.3		
CULG	21	0055E	0055U	0108	S07	W33	.549	16522	18.6	13?	-N		P	0055	120	1.4		
743 YUNN	21	0037	0039	0045	S15	E64	.903	16539	25.8	8	?N		C		96	2.2		ZX
	IMP.1 NO ! PALE																	
GRP80744	21	0038	0105+0	0126	S16	E17	.376	16523	22.3	48	-N							
YUNN	21	003A	0105	0126	S17	E18	.398	16529	22.4	48	1N		C		209	2.3		
CULG	21	0055U	0105	0125	S15	E16	.353	16523	22.2	30?	-F		C	0105	70	.8		
GRP80745	21	0100	0105	0132?	S16	E67	.924	16539	26.1	32	1F							
YUNN	21	0100	0105	0132	S15	E64	.903	16533	25.8	32	1F		C		96	2.2		
CULG	21	0120U	0138	0206	S18	E70	.943	16539	26.3	46?	1F		C	0138	130			
746 CULG	21	0133	0147	0207	N23	W02	.418	16528	20.9	34	-F		C	0147	100	1.1	G	ZX
747 YUNN	21	0348	0349	0403	S17	E18	.398	16523	22.5	15	-N		C		80	.9		ZX
748 YUNN	21	0349	0403	0433	S37	W38	.619	16522	18.3	41	-N		C		80	1.0		ZX
GRP80749	21	0510+9	0523	0635	S17	E17	.386	16529	22.5	85	1N				200	2.2	EJ	
			0558+6															
YUNN	21	0510	0523	0555	S17	E17	.386	16523	22.5	45	1N	*	C		209	2.3	E	
CULG	21	0552	0604U	0632	S17	E17	.386	16529	22.5	40	-N	*	C	0604	140	1.5		
YUNN	21	0557	0558	0638	S17	E17	.386	16523	22.5	41	1N	*	C		274	3.0		
ABST	21	0603E	0603	0613?	S16	E15	.352	16523	22.4	10?	-N	*	P	0603	175	1.9	EJ	
750 YUNN	21	0545	0553	0603	S30	W21	.569	16533	19.7	15	-N		C		80	.9		ZX
751 YUNN	21	0603	0625	0645	S30	W21	.569	16533	19.7	42	-N		C		64	.8		ZX
752 YUNN	21	0656	0705	0754	S18	E17	.397	16529	22.6	58	-N		C		129	1.4		ZX
753 ABST	21	0726	0728	0742	S30	W22	.577	16533	19.7	16	-F		C	0728	87	1.1	DJ	ZX
754 ABST	21	0810	0814	0834?	S07	W40	.646	16522	18.3	24?	-N		P	0814	96	1.3	DJ	ZX
GRP80755	21	0813+6	0821	0925	S12	W43	.693	16518	18.1	72	-N						DJ	
			0836															
ABST	21	0813E	0821	0300?	S13	W43	.695	16515	18.1	47?	1N		P	0821	175	2.5	DJ	
YUNN	21	0819	0836	0325	S11	W44	.703	16518	18.0	66	-N		C		129	1.7		
GRP80756	21	0833E	0836+2	0900?	S17	E17	.386	16529	22.6	27	-N				110	1.2	EJ	
			0852															
ABST	21	0833E	0838	0300?	S16	E18	.385	16523	22.7	27?	-N		P	0838	131	1.5	EJ	
YUNN	21	0834E	0836	0345?	S16	E18	.388	16529	22.7	11?	-B		P		98	1.0		
ABST	21	0840	0852	0900	S19	E15	.387	16529	22.5	20?	-F		P	0852	140	1.6	EJ	
757 WEND	21	0932E		1048?	S17	E58	.857	16533	25.7	76?	1F		C	1044	225	4.6	L	ZX
758 WEND	21	0943	0943	1048?	S16	E69	.936	16541	26.6	65?	-F		C	0949	40			ZX
GRP80759	21	1048	1058+3	1115?	S16	E14	.341	16529	22.5	27	-N						E	
WEND	21	1048	1058	1115?	S17	E11	.322	16529	22.3	27?	-N		C	1058	44	.5	E	
WEND	21	1056	1101	1115?	S16	E18	.388	16523	22.8	19?	-N		C	1101	100	1.1	E	

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq Deg.		
	21	1115	1153	NO FLARE PATROL														
	21	1207	1211	NO FLARE PATROL														
760 WEND	21	1211E		1213D	S15	E60	.872	16533	26.0	8D	1N		C	1211	162	3.5	B	ZX
	21	1219	1251	NO FLARE PATROL														
761 HUAN	21	1310	1316	1317	S16	E17	.376	16529	22.8	7	-N	1	C	1316	25	.3	D	ZX
762 HUAN	21	1411		1418	S17	E15	.363	16529	22.7	7	-F	1	C					ZX
763 HUAN	21	1533		1537	S17	E15	.363	16529	22.8	4	-F	1	C					ZX
764 HUAN	21	1613E		1654	S17	E13	.342	16529	22.7	41D	-N	1	P	1633	90	1.0	E	ZX
765 HUAN	21	1703		1711	S13	E59	.861	16541	26.1	8	-F	1	C	1707	20		D	ZX
766 HUAN	21	1751	1753	1758	S17	E12	.332	16529	22.6	7	-N	1	C	1753	50	.6		ZX
767 HUAN	21	1951		1956D	S16	E08	.282	16529	22.4	5D	-F	1	P				E	ZX
768 CULG	21	2003E	2003E	0240U	N23	E55	.849	0	26.0	397D	?F		P	2003	520	8.8	SFI	ZX
	IMP.2 NO : PALE RAMY																	
769 CULG	21	2039	2045	2125	S33	W25	.601	16533	20.0	46	-N		C	2045	120	1.5		ZX
770 CULG	21	2125	2134	2146	S15	E10	.286	16529	22.6	21	-N		C	2134	140	1.5	T	ZX
771 CULG	21	2140	2143	2147	S30	W30	.645	16533	19.7	7	-N		C	2143	80	1.0		ZX
772 CULG	21	2247	2253	2302	S29	W29	.628	16533	19.8	15	-F		C	2253	60	.8		ZX
773 CULG	22	0036	0044	0151	S15	E63	.895	16541	26.8	75	?N		C	0044	160	3.6		ZX
	IMP.1 NO : YUNN																	
774 YUNN	22	0056E	0058	0146D	S17	E06	.281	16523	22.5	500	-N		C		161	1.7	K	ZX
775 CULG	22	0201	0213	0247	S15	E62	.887	16541	26.7	46	?F		C	0213	120	2.7		ZX
	IMP.1 NO : YUNN MITK																	
776 YUNN	22	0300E	0300	0308	S14	E53	.807	16541	26.1	8D	-N		C		32	.5		ZX
777 YUNN	22	0300E	0308	0325	S16	E05	.260	16529	22.5	25D	?B		C		306	3.2	F	ZX
	IMP.1 NO : CULG MITK																	
778 YUNN	22	0330	0333	0400	S07	W43	.756	16522	18.5	30	?N		C	0335	145	2.2		ZX
	IMP.1 NO : CULG																	
GRP80779	22	0506+9	0516+2	0604	S17	E53	.812	16541	26.2	58	2N				410	7.1	FHJ	
CULG	22	0506	0516	0607	S17	E54	.821	16541	26.3	61	2F		C	0516	500	8.8	H	
YUNN	22	0515	0518	0600	S18	E52	.804	16541	26.1	45	2B		C		321	5.2	JF	
GRP80780	22	0545>9	0603+3 0646	0811	S06	W51	.778	16522	18.4	146	1N				290	4.6	FHK	
YUNN	22	0545	0603	0635	S05	W49	.755	16522	18.6	50	1B		C		241	3.7	EF	
ABST	22	0553	0603	0848D	S07	W51	.778	16522	18.4	169D	2N		P	0603	349	5.5	FK	
YUNN	22	0644	0646	0740	S06	W50	.767	16522	18.5	56	1B		C		161	2.6	H	
CULG	22	0804E	0805	0811	S06	W53	.799	16522	18.4	7D	-F		P	0805	40	.6		
GRP80781	22	0637E	0639+0	0647	S23	W33	.664	16533	19.8	10	-N				120	1.6	DJ	
ABST	22	0637E	0633	0643	S23	W34	.673	16533	19.7	12D	1N		P	0639	157	2.2	DJ	
YUNN	22	0639E	0639	0645	S29	W33	.664	16533	19.8	6D	-N		C		80	1.1		
GRP80782	22	0723+1	0725+1 0805	0830	S29	W35	.682	16533	19.7	67	-N						JK	
ABST	22	0723	0725	0848D	S23	W35	.682	16533	19.7	85D	-N		P	0725	122	1.7	DJK	
YUNN	22	0724	0726	0830	S29	W33	.664	16533	19.8	66	1N		C		290	3.9	EK	
CULG	22	0804E	0805	0816	S28	W36	.685	16533	19.6	12D	-F		P	0805	80	1.1		
783 YUNN	22	0814	0818	0825	S17	E00	.263	16529	22.3	11	-N		C		177	1.8	E	ZX
784 YUNN	22	0842	0850 0927	1000	S06	W50	.767	16541	18.6	78	1B		C		290	5.9	EK	ZX
GRP80785	22	0842	0927	1000	S06	W50	.767	16522	18.6	78	1B						EK	
ABST	22	0832	0837	0848D	S14	E57	.844	16522	26.6	16D	1N		P	0837	140	2.6	EJ	
YUNN	22	0840	0850	0930	S16	E57	.847	16522	26.6	50	1N		C		177	3.2	EK	

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq. Deg.	
	22	1010	1225	NO FLARE PATROL													
	22	1230	1504	NO FLARE PATROL													
	22	1507	1523	NO FLARE PATROL													
	22	1532	1542	NO FLARE PATROL													
	22	1616	1631	NO FLARE PATROL													
786 HOLL	22	1826	1830	1834	S12	E53	.804	16541	26.7	8	-F	3	C		42		ZX
	22	1916	1922	NO FLARE PATROL													
	22	1937	2002	NO FLARE PATROL													
	22	2006	2036	NO FLARE PATROL													
	22	2207	0017	NO FLARE PATROL													
787 CULG	23	0215	0223	0233	S20	W43	.716	16525	19.9	18	-F		C	0223	70	1.0	G	ZX
GRP80788	23	0438+4	0445+1	0502	S10	W64	.899	16522	18.4	24	2B				330	7.6		
CULG	23	0438	0446	0458	S15	W65	.909	16522	18.3	20	2B	*	C	0446	250	5.6		
YUNN	23	0442	0445	0505	S06	W64	.838	16522	18.4	23	2B	*	C		417	9.5		
789 YUNN	23	0440	0442	0450	S16	W09	.287	16529	22.5	10	-N		C		145	1.5		ZX
790 YUNN	23	0515	0516	0525	S04	W62	.882	16522	18.6	10	2B		C		241	5.5		ZX
791 YUNN	23	0720	0725	0735	S06	W64	.898	16522	18.5	15	2B		C		241	5.5		ZX
792 WEND	23	1022E		1219D	S07	W69	.933	16522	18.3	117D	-N		C	1033	75		E	ZX
793 HUAN	23	1333		1345	S08	W82	.930	16518	17.4	12	-F	1	C					ZX
GRP80794	23	1848+1	1849+1	1918	S08	W73	.956	16522	18.3	30	-N						F	
BIGB	23	1848	1850	1931	S07	W74	.961	16522	18.2	43	-B		C	1859	90			
HOLL	23	1843	1843	1904	S10	W73	.956	16522	18.3	15	-N	3	C				F	
795 BIGB	23	2010	2016	2051D	N19	W59	.879	16524	19.4	41D	-N		P	2016	70	1.4		ZX
796 BIGB	23	2042	2051U	2051D	S25	E90	1.000	16548	30.6	9D	-N		P	2051	120			ZX
797 HOLL	23	2222	2223	2234	S09	W75	.965	16522	18.3	12	-F	3	C					ZX
798 YUNN	24	0037	0040	0043	S30	W55	.858	16533	19.9	6	-N		C		64	1.2		ZX
GRP80799	24	0123+3	0135+0	0146	S06	W77	.974	16522	18.3	17	-N				35			
CULG	24	0123	0135	0152	S05	W80	.984	16522	18.1	23	-N		C	0135	40			
YUNN	24	0132	0135	0143	S07	W74	.961	16522	18.5	8	-N		C		32			
800 CULG	24	0246	0256	0317	N34	W58	.908		0 19.8	31	-F		C	0256	60	1.4	T	ZX
801 CULG	24	0248	0253	0258	S05	W82	.990	16522	18.8	10	-N		C	0253	40			ZX
802 CULG	24	0343	0357	0414	S05	W82	.990	16522	18.8	31	?F		C	0357	60			ZX
	IMP.1 NO : YUNN																	
803 CULG	24	0448	0458	0520	S06	W85	.996	16522	17.8	32	-F		C	0458	20			ZX
804 YUNN	24	0504	0508	0510	S20	W58	.860	16525	19.9	6	-N		C		48	1.0		ZX
805 YUNN	24	0622	0626	0634	S16	E31	.553	16541	26.6	12	-N		C		64	.8	E	ZX
806 YUNN	24	0744	0749	0812	S14	E30	.530	16541	26.6	28	?B		C		225	2.7		ZX
	IMP.1 NO : CULG																	
807 CULG	24	0824	0827	0839	S06	W83	.984	16522	18.4	15	-N		C	0827	40			ZX
808 WEND	24	0917	0925	0930	S21	W59	.870	16525	20.0	21	-F		C	0925	62	1.3		ZX
GRP80809	24	0923+1	0935+4	1000	S13	W27	.483	16529	22.4	37	-N				150	1.8	E	
MONT	24	0923	0935	0954	S15	W28	.508	16529	22.3	31	-N		C	0935	150			
WEND	24	0924	0939	1023	S14	W27	.489	16529	22.4	59	-N		C	0939	170	2.0		
KANZ	24	0924	0935	1006	S13	W27	.483	16529	22.4	42	-N	1						
YUNN	24	0925E	0925	0935	S13	W28	.497	16529	22.3	100	-B		C		129	1.5	E	
810 KANZ	24	1101	1111	1131	N32	W63	.914		0 20.0	30	-F	1						ZX
811 KANZ	24	1226	1233	1253	S16	E30	.540	16541	26.8	27	-B	2					E	ZX
812 KANZ	24	1323	1327	1335	S20	W63	.899	16525	19.8	12	-F	1						ZX

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	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONG	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
	24	1418	1440	NO FLARE PATROL													
	24	1458	1502	NO FLARE PATROL													
813 HOLL	24	1512	1517	1543	S23	W64	.909	16525	19.8	31	-N	3	C		44		ZX
814 CULG	24	2106	2116	2130U	S12	W34	.576	16529	22.3	24D	-N		C	2116	100	1.3	T ZX
815 CULG	24	2111	2116	2125	S16	E23	.527	16541	27.1	14	-F		C	2116	60	.7	ZX
	24	2131	2132	NO FLARE PATROL													
	24	2145	2146	NO FLARE PATROL													
816 CULG	24	2329	2333	2340U	S13	W71	.348	16525	19.7	12D	-F		C	2333	40		ZX
817 CULG	25	0058	0101	0127	S14	E23	.433	16541	26.8	29	-N		C	0101	100	1.1	ZX
818 CULG	25	0126	0131	0144	S26	E75	.969	16548	30.7	18	-F		C	0131	40		ZX
GRP80819	25	0206>3	0225	0313	S13	W34	.573	16529	22.5	73	-F						
CULG	25	0206	0225	0316	S12	W34	.575	16529	22.5	70	-F		C	0225	60	.8	
PURP	25	0233		0322	S14	W34	.582	16523	22.6	49	-F		P				
820 PURP	25	0458	0501	0503	S15	W37	.625	16529	22.4	5	-F		P				ZX
GRP80821	25	0633	0717	0737	S15	E18	.373	16541	26.6	64	1B						E
PURP	25	0633	0717	0744	S15	E19	.386	16541	26.7	71	1B		C				
YUNN	25	0713E	0719	0730	S16	E17	.370	16541	26.6	11D	-N		C		113	1.2	E
GRP80822	25	0655>9	0706 0714+6	0900	S14	W43	.696	16529	22.1	65	2B						F
CULG	25	0655	0706	0759D	S14	W43	.636	16523	22.1	63D	2N		C	0706	560	7.8	F
PURP	25	0709	0714	0801	S14	W44	.708	16523	22.0	52	2B		C		830	11.8	
YUNN	25	0713E	0723	0759	S14	W42	.684	16529	22.2	46D	2B		C		385	5.1	
CATA	25	0715E	0730	0750D	S16	W43	.701	16529	22.1	35D	2B	1	P	0730	365	5.3	
823 CULG	25	0743	0751U	0756	S15	E75	.366	16548	30.3	13	-F		C	0751	40		ZX
824 YUNN	25	0833	0835	0933	S13	E06	.214	16539	25.8	57	-N		C		161	1.6	ZX
	25	0955	1100	NO FLARE PATROL													
	25	1110	1112	NO FLARE PATROL													
	25	1203	1400	NO FLARE PATROL													
825 HOLL	25	1614	1617	1621	S15	E66	.916	16548	30.6	7	-F	3	C		52		ZX
826 HOLL	25	1902	1912	1925	S14	E66	.915	16548	30.7	23	-B	3	C		80		ZX
827 HOLL	25	1946	1946	1953	S15	E64	.931	16548	30.6	7	-F	3	C		18		ZX
828 HOLL	25	1955	1956	2000	S16	E12	.313	16541	26.7	5	-F	3	C		38		ZX
GRP80829	25	2157+2	2159+0	2213	S15	E10	.279	16541	26.7	16	-N						F
CULG	25	2157	2159	2214	S15	E11	.289	16541	26.7	17	-B		C	2159	160	1.7	F
HOLL	25	2159	2159	2212	S16	E09	.283	16541	26.6	13	-N	3	C		73		F
830 HOLL	25	2233	2233	2326	S16	E09	.283	16541	26.6	53	-N	3	C		54		ZX
	25	2334	2357	NO FLARE PATROL													
831 PURP	26	0048	0113	0212	S13	W04	.198	16539	25.7	84	?B		P				S ZX
	IMP.1 NC : MITK																
	26	0445	0525	NO FLARE PATROL													
	26	0545	0608	NO FLARE PATROL													
	26	0622	0741	NO FLARE PATROL													
	26	0800	0930	NO FLARE PATROL													
832 KHAR	26	0945		0957	S15	E03	.226	16541	26.6	12	-F		V				ZX
	26	1015	1030	NO FLARE PATROL													
	26	1058	1134	NO FLARE PATROL													
833 BIGB	26	1724	1725U	1737	S14	W02	.236	16541	26.6	13	-N	1			50	.5	ZX
834 BIGB	26	1837	1838U	1921	S25	E55	.844	16548	30.9	44	-N	1			100	1.7	ZX
835 HUAN	26	2036E		2043D	S16	E00	.238	16541	26.9	7D	-F	1	P				E ZX

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	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LONG. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP8J836	26	2115+J	2123	2133	S16	W59	.863	16529	22.5	18	-B						D	
CULG	26	2115	2120	2133	S15	W60	.870	16529	22.4	18	-B		C	2120	80	1.6		
HUAN	26	2115		2117D	S18	W58	.857	16529	22.5	2D	-N	1	P	2117	20	.4	D	
837 CULG	26	2208	2208	2223	S15	W6J	.873	16529	22.4	23	?B		C	2208	200	4.8	VHJ	ZX
	IMP.1 NO I BIGB PALE																	
838 CULG	26	2202U	2235U	2320U	S15	E40	.662	16548	29.3	78D	-F		C	2235	110	1.8	FT	ZX
GRP80839	27	0039+7	0042+2 0052	0056	S17	E5J	.780	16548	30.8	17	-F							
CULG	27	0039	0042	0108	S15	E50	.776	16548	30.8	29	1N		C	0042	170	2.6		
YUNN	27	0040	0044	0050	S17	E47	.743	16548	30.6	10	-F		C		64	1.0		
PURP	27	0046	0052	0056	S17	E51	.790	16548	30.9	10	-F		C					
840 CULG	27	0053	0111	0119	S16	W63	.895	16529	22.3	26	-F		C	0111	80	1.6		ZX
GRP80841	27	0116+1	0125+1	0136	S16	W03	.243	16541	26.8	20	-N						U	
CULG	27	0116	0125	0133	S16	W04	.247	16541	26.8	17	-F		C	0125	190	1.9	U	
PURP	27	0117	0126	0138	S17	W02	.257	16541	26.9	21	1N		C					
842 YUNN	27	0203E	0203	0212	S16	W64	.902	16529	22.3	9D	-F		C		32	.7		ZX
GRP80843	27	0217>3	0228+1	0232D	S15	E50	.776	16548	30.8	15	-F						EHJ	
PURP	27	0217	0229	0307	S17	E50	.780	16548	30.8	50	-F		C					
VORO	27	0228	0228	0232	S13	E50	.773	16548	30.3	4	1F		C	0228	161	2.6	EHJ	
GRP80844	27	0237+7	0246+5	0302	S14	E46	.730	16548	30.6	25	1F				220	3.3	EJ	
YUNN	27	0237	0251	0303D	S17	E46	.738	16548	30.6	26D	1N		C		177	2.6		
VORO	27	0244	0246	0300	S12	E47	.738	16548	30.6	16	1F		C	0246	269	4.1	EJ	
GRP80845	27	0421	0426 0448+3	0455	S16	E46	.735	16548	30.6	34	1B				250	3.7	FJ	
YUNN	27	0421	0426	0438	S17	E46	.738	16548	30.6	17	1B		C		145	2.2	J	
CULG	27	0428U	0456U	0505U	S15	E46	.733	16548	30.6	37D	1N		P	0456	220	3.3	F	
PURP	27	0434	0448	0451	S17	E43	.770	16548	30.3	17	1B		P					
YUNN	27	0450E	0451	0458D	S16	E44	.712	16548	30.5	8D	1B		P		290	4.2	J	
846 CULG	27	0732	0732	0740	S15	E45	.721	16548	30.7	8	-F		C	0732	90	1.4		ZX
	27	1105	1122	NO FLARE PATROL														
	27	1130	1142	NO FLARE PATROL														
	27	1152	1245	NO FLARE PATROL														
847 WEND	27	1245E		1324D	S16	W19	.394	16541	26.1	39D	-F		C	1247	50	.6		ZX
848 WEND	27	1356	1403	1415D	S14	W72	.351	16523	22.2	13D	-N		C	1403	40			ZX
849 HOLL	27	1723	1723	1732	S19	E40	.676	16548	30.7	9	-F	3	C		28			ZX
850 BIGB	27	1816	1819	1833	S13	E30	1.000	16558	3.5	17	-N		C	1819	60			ZX
851 BIGB	27	1856	1858	1915	S23	E42	.715	16548	30.9	19	-B		C	1858	20	.3		ZX
GRP80852	27	1918+1	1920+2	1935	S23	E41	.705	16548	30.9	17	-N				50	.7		
BIGB	27	1918	1922	1933	S23	E43	.726	16548	31.0	21	-B		C	1922	60	.8		
HOLL	27	1919	1920	1930	S24	E39	.688	16548	30.7	11	-F	3	C		42			
853 CULG	27	2013	2024	2027	S25	E38	.683	16548	30.7	14	-F		C	2024	40	.5	K	ZX
GRP80854	27	2037+2	2038+0	2045	S18	W16	.373	16541	26.7	8	-F							
CULG	27	2037	2038	2046	S15	W16	.347	16541	26.7	9	-F		C	2039	100	1.0		
HOLL	27	2039	2039	2044	S21	W17	.423	16541	26.6	5	-F	3	C		29			
855 CULG	27	2233	2234	2242	S25	E36	.662	16548	30.6	9	-F	*	C	2234	30	.4		ZX
856 BIGB	27	2233	2246	2303	S13	E30	1.000	16558	3.7	30	-B		C	2246	40			ZX
GRP8J857	27	2243>9	2248 2319	0043	S20	E20	.445	16547	29.4	123	1F						FK	
CULG	27	2240	2248	0043	S22	E20	.465	16547	29.4	123	1F		C	2248	240	2.6	KF	
BIGB	27	2318	2319	2353D	S19	E21	.447	16547	29.5	41D	-N		P	2319	50	.6		

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONO	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP80858	27	2240+6	2247+2 2311+7	2325	S15	E37	.625	16548	30.7	45	-F				60	.8	FKL	
CULG	27	2240	2247	2320	S15	E38	.637	16548	30.8	40	-F	*	C	2247	80	1.0	FKLT	
BIGB	27	2246	2249	2302	S14	E37	.621	16548	30.7	16	-N	*	C	2249	40	.5		
CULG	27	2301	2311	2320	S15	E36	.612	16548	30.7	19	-F	*	C	2311	40	.5	T	
BIGB	27	2308	2318	2329	S15	E38	.637	16548	30.8	21	-N	*	C	2318	50	.7		
GRP80859	27	2320+8	2332+1	2355	S15	W17	.360	16541	26.7	35	-F							
CULG	27	2320	2332	2353	S16	W17	.369	16541	26.7	30	-F		C	2332	180	2.0		
BIGB	27	2328	2333	2359D	S15	W17	.360	16541	26.7	31D	-N		P	2333	50	.5		
GRP80860	28	0036+6	0038+5	0046	S15	E37	.623	16548	30.8	10	-N				70	.9	EJ	
CULG	28	0036	0038	0046	S15	E37	.623	16548	30.8	10	-F		C	0038	70	.9	T	
VORO	28	0039E		0057	S10	E38	.622	16548	30.9	18D	-N		C	0040	143	1.8	EJ	
YUNN	28	0042	0043	0045	S15	E35	.598	16548	30.7	3	-N		C		64	.8		
861 CULG	28	0042	0046	0053	S25	E37	.671	16548	30.8	11	-N		C	0046	110	1.4	T	ZX
GRP80862	28	0113+5	0119+3	0123	S24	E35	.644	16548	30.7	10	-F						E	
CULG	28	0113	0119	0123	S25	E37	.671	16548	30.8	10	-F		C	0119	110	1.4	T	
YUNN	28	0116	0119	0124	S24	E33	.622	16548	30.5	8	-F		C		48	.6	E	
VORO	28	0118	0119	0123	S18	E35	.611	16548	30.7	5	1F		C	0119	224	3.0	E	
863 CULG	28	0206E	0206E	0218	N23	W39	.716	16535	25.2	12D	-F		P	0206	60	.8		ZX
864 CULG	28	0312U	0317	0323	S25	E35	.650	16548	30.8	11D	-F		P	0317	90	1.2	T	ZX
865 CULG	28	0324	0325	0337	S18	W13	.343	16541	27.2	13	-F		C	0325	80	.8		ZX
866 CULG	28	0348	0350	0357	S18	W13	.343	16541	27.2	9	-F		C	0350	80	.8		ZX
GRP80867	28	0420+0	0421+0	0425	S17	W13	.331	16541	27.2	5	-N				60	.6		
CULG	28	0420	0421	0425	S18	W13	.343	16541	27.2	5	-N		C	0421	40	.5		
YUNN	28	0423	0421	0425	S17	W14	.342	16541	27.1	5	-N		C		80	.9		
GRP80868	28	0444	0449+2	0507	S24	E34	.633	16548	30.7	23	1F				200	2.6		
CULG	28	0444	0451	0518	S25	E35	.650	16548	30.8	34	1F		C	0451	230	3.0	T	
YUNN	28	0449E	0449	0455	S24	E34	.633	16548	30.8	6D	1N		C		177	2.3		
GRP80869	28	0530	0536+1	0544	S24	E31	.600	16548	30.6	14	-B				150	1.9		
YUNN	28	0530	0536	0544	S24	E31	.600	16548	30.6	14	1B		C		209	2.6		
CULG	28	0531U	0537U	0542U	S24	E32	.611	16548	30.6	11D	-N		P	0537	100	1.3	T	
GRP80870	28	0608	0643	0735D	S22	E34	.620	16548	30.8	57	1N				340	4.4	JK	
ABST	28	0608	0640	0744	S24	E35	.644	16548	30.9	96	1N		C	0640	314	4.2	FJK	
ABST	28	0637	0640	0712	S20	E32	.585	16548	30.7	35	-N		C	0640	87	1.1	DJ	
YUNN	28	0642E	0642	0705	S22	E34	.620	16548	30.8	23D	1B		C		290	3.7	E	
871 ABST	28 IMP.1	0649 NO : YUNN	0656 CULG	0731	S14	E84	.994	16558	3.6	12	?F		C	0656	87		ADJ	ZX
GRP80872	28	0718+1	0723+4	0736	S14	E30	.527	16548	30.6	18	-N				160	1.9	EJ	
YUNN	28	0718	0727	0727D	S15	E30	.532	16548	30.6	9D	-N	*	C		113	1.3		
ABST	28	0719	0723	0736	S14	E31	.540	16548	30.6	17	1F	*	C	0723	218	2.7	EJ	
873 YUNN	28	0812	0818	0825	S24	E31	.600	16548	30.7	13	-N		C		64	.8	H	ZX
GRP80874	28	0817+8	0824+5	0913	S15	W22	.423	16541	26.7	56	1N				280	3.1	EJ	
ABST	28	0817	0824	0834D	S15	W23	.437	16541	26.6	17D	1N	*	P	0824	262	3.0	EJ	
CATA	28	0825E	0825	0930D	S15	W22	.423	16541	26.7	40D	1B	*	P	0825	225	2.6		
YUNN	28	0825	0829	0913	S14	W22	.416	16541	26.7	48	1N	*	C		353	3.9	E	
875 ABST	28 IMP.1	0821 NO : YUNN	0824 CULG	0834D	S14	E84	.994	16558	3.6	13D	?F		P	0824	87		ADJ	ZX
876 KANZ	28	1145	1214	1221D	S15	E30	.532	16548	30.7	36D	-F	1						ZX
	28	1257	1310	NO FLARE PATROL														
	28	1338	1545	NO FLARE PATROL														
	28	1553	1625	NO FLARE PATROL														
877 HOLL	28	1630	1632	1654	S13	E76	.969	16558	3.4	24	-F	3	C					ZX
	28	1701	1723	NO FLARE PATROL														
878 HOLL	28	1829	1829	1839	S14	E27	.485	16548	30.8	10	-F	3	C		28			ZX

Hα SOLAR FLARES

DECEMBER 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LON. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP80879	28	2137+1	2137+1	2154	S17	W87	.998	16529	22.4	17	-N							
CULG	28	2137	2137	2156	S16	W90	1.000	16523	22.2	19	1F		C	2137	90			
HOLL	28	2138	2138	2152	S18	W84	.994	16529	22.6	14	-N	3	C		23			
880 CULG	28	2145	2151	2159D	N13	W26	.582	16545	27.8	140	-F		P	2151	50	.6		ZX
881 BIGB	28	2200	2204	2209	S23	E26	.537	16548	30.9	9	-B		C	2204	40	.5		ZX
882 BIGB	28	2220	2222	2302	S23	E27	.548	16548	31.0	42	-B		C	2222	70	.8		ZX
883 CULG	28	2240	2244	2305	N13	W26	.502	16545	27.8	25	-F		C	2244	110	1.3	L	ZX
884 CULG	28	2303	2304	2306	S11	E79	.981	16558	3.9	3	-F		C	2304	50			ZX
885 CULG	29	0013	0013	0021	S15	E20	.395	16548	30.5	11	-F		C	0013	80	.9	L	ZX
GRP80886	29	0024>9	0038 0050	0052	S13	E22	.408	16548	30.7	28	-N							
PURP	29	0024	0038	0048	S11	E23	.412	16548	30.7	24	-N		C					
YUNN	29	0046	0050	0056	S16	E21	.417	16548	30.6	10	-N		C		96	1.1		
GRP80887	29	0034	0043	0055	S15	W85	.995	16523	22.6	21	-N				60		AK	
CULG	29	0034	0043	0102	S16	W90	1.000	16529	22.3	28	-N		C	0043	60		K	
YUNN	29	0044E	0044	0047	S15	W81	.987	16529	23.0	3D	1N		C		64		A	
GRP80888	29	0139+1	0143+2	0148	S15	E86	.997	16563	4.5	9	1N						AG	
CULG	29	0139	0145	0149	S15	E90	1.000	16553	4.8	10	1F		C	0145	70			
YUNN	29	0140	0143	0147	S16	E82	.989	16553	4.2	7	1B		C		161		AG	
889 YUNN	29	0154	0158	0202	S15	W80	.984	16529	23.1	8	?N		C		64			ZX
	IMP.1 NO : CULG PURP																	
890 PURP	29	0157	0203	0246	S15	E23	.436	16548	30.8	49	-F		C					ZX
891 PURP	29	0210	0211	0214	S13	E73	.956	16558	3.6	4	?N		C				T	ZX
	IMP.1 NO : CULG YUNN																	
892 CULG	29	0255	0258	0308	S11	E74	.963	16558	3.7	13	?F		C	0258	70			ZX
	IMP.1 NO : PURP YUNN																	
GRP80893	29	0457+3	0502+0	0508D	S15	E71	.945	16558	3.5	11	1N							
CULG	29	0457	0502	0540	S16	E70	.940	16558	3.5	43	2F		C	0502	260			
PURP	29	0500	0502	0508	S15	E72	.951	16558	3.6	8	1N		C					
GRP80894	29	0515>9	0531 0540	0559	S16	W34	.588	16541	26.7	44	?F						HI	
CULG	29	0515	0531	0610	S17	W35	.605	16541	26.6	55	?F		C	0531	420	5.3	I	
	IMP.2 IMP.S																	
YUNN	29	0535	0540	0548	S15	W34	.584	16541	26.7	13	-F		C		32	.4	H	
895 CULG	29	0614	0620	0641	N15	E63	.905	16557	3.0	27	-F		C	0620	90	2.0		ZX
896 CULG	29	0708	0712	0717	S16	W90	1.000	16529	22.5	9	?N		C	0712	150		V	ZX
	IMP.1 NO : PURP YUNN																	
897 MONT	29	1044	1052	1112	S16	E18	.378	16548	30.8	28	-N		C	1052	200			ZX
	29	1200	1216	NO FLARE PATROL														
	29	1229	1354	NO FLARE PATROL														
	29	1424	1446	NO FLARE PATROL														
GRP80898	29	1542+0	1542 1603	1614D	S14	E69	.934	16558	3.8	32	-N							
BIGB	29	1542E	1620	1648D	S14	E69	.934	16558	3.8	66D	-B		P	1620	230			
HOLL	29	1542	1542	1549	S13	E69	.933	16558	3.8	7	-F	3	C		16			
HOLL	29	1559	1603	1614	S14	E69	.934	16558	3.8	24	-F	3	C		28			
899 BIGB	29	1547	1551	1604	S24	E15	.436	16548	30.8	17	-N		C	1551	80	.9		ZX
GRP80900	29	1552+2	1555+0	1603	N12	W35	.612	16545	27.0	11	-F				30	.4		
BIGB	29	1552	1555	1603	N13	W35	.617	16545	27.0	8	-N		C	1555	30	.4		
HOLL	29	1554	1555	1605	N11	W35	.607	16545	27.0	11	-F	3	C		31			
GRP80901	29	1603+1	1610+1	1626	S14	E11	.271	16548	30.5	17	-B				60	.6		
BIGB	29	1603	1611	1628	S15	E11	.283	16548	30.5	19	-B		C	1611	60	.6		
HOLL	29	1610	1610	1623	S14	E12	.283	16548	30.6	13	-B	3	C		66		DE	

Hα SOLAR FLARES

DECEMBER 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
902 HOLL	29	1614	1620	1651	S12	E71	.945	16558	4.0	37	-B	3	C		116		UDE	ZX
903 HOLL	29	1730	1731	1740	S15	E14	.318	16548	30.8	10	-F	3	C		29		F	ZX
904 HOLL	29	1752	1753	1800	S13	E11	.259	16548	30.6	8	-F	3	C		24			ZX
905 BIGB	29	1837E	1840	1853	S17	W90	1.000	16523	23.0	220	-N		P	1840	40			ZX
906 BIGB	29	1853	1854	1857	S15	E09	.263	16548	30.5	4	-N		C	1854	30	.3		ZX
907 BIGB	29	1950	1953	2005	S17	W90	1.000	16529	23.1	15	-N		C	1953	30			ZX
908 CULG	29	2033	2038	2044	S15	E60	.863	16558	3.4	11	-N		C	2038	50	1.0		ZX
GRP80909	29	2105	2109+0	2159	S16	W44	.711	16541	26.6	54	-N						F	
BIGB	29	2105	2109	2158	S16	W45	.722	16541	26.5	53	-N		C	2109	60	.9		
CULG	29	2103E	2103	2200	S16	W43	.693	16541	26.7	510	1N		P	2103	280	3.9	F	
GRP80910	29	2133+2	2136+0	2144	S15	E08	.253	16548	30.5	11	-N							
CULG	29	2133	2136	2149	S15	E07	.245	16548	30.4	16	-N		C	2136	80	.8		
BIGB	29	2135	2136	2139	S15	E09	.263	16548	30.6	4	-N		C	2136	30	.3		
911 CULG	29	2150	2153	2200	S24	E12	.412	16548	30.8	10	-F		C	2153	40	.4		ZX
GRP80912	29	2221+1	2223+5	2229	S14	E07	.230	16548	30.5	8	-N						J	
CULG	29	2221	2228	2233	S14	E06	.222	16548	30.4	12	-N		C	2228	180	1.8	J	
BIGB	29	2222	2223	2225	S15	E03	.263	16548	30.6	3	-N		C	2223	20	.2		
913 BIGB	29	2307	2312	2326	S14	E54	.814	16558	3.0	19	-N		C	2312	50	.9		ZX
914 BIGB	29	2332	2334	2337	S15	E09	.263	16548	30.7	5	-N		C	2334	20	.2		ZX
GPP80915	29	2341+0	2342+0	2350	N12	W40	.674	16545	27.0	9	-F				70	.9		
BIGB	29	2341	2342	2350	N12	W41	.686	16545	26.9	9	-N		C	2342	90	1.2		
CULG	29	2341	2342	2349	N13	W40	.678	16545	27.0	8	-F		C	2342	50	.7		
916 CULG	29	2353	2357	0007	S16	W45	.722	16541	26.6	14	1F		C	2357	190	2.7		ZX
917 CULG	30	0047	0114	0128	S20	E36	.631	16555	1.7	41	-F		C	0114	60	.8		ZX
918 YUNN	30	0205E	0205	0208	S16	E08	.266	16548	30.7	30	-B		C		96	1.0		ZX
919 YUNN	30	0454E	0454	0500	S14	E03	.202	16548	30.4	60	-B		C		96	1.0		ZX
920 YUNN	30	0805	0813	0826	S12	W52	.791	16541	26.4	21	-N		C		80	1.3		ZX
921 ATHN	30	1105E	1106	1130D	S18	E43	.770	16558	3.1	250	-N	3	V	1106	49	.8		ZX
922 CATA	30	1135E	1145	1153D	S14	W57	.842	16541	26.2	150	1N	1	P	1145	169	3.2		ZX
923 BIGB	30	1557	1601	1605	S11	E90	1.000	16567	6.4	8	-N		C	1601	50			ZX
924 BIGB	30	1609	1611	1628	N12	E90	1.000	16566	6.4	19	-N		C	1611	60			ZX
925 BIGB	30	1625	1629	1636	N11	W50	.784	16545	26.9	11	-N		C	1629	80	1.3		ZX
926 HOLL	30	1842	1844	1853	N10	W51	.792	16545	27.0	11	-F	2	C		13			ZX
927 BIGB	30	1925	1927	1938	S15	W62	.885	16541	26.2	13	-F		C	1927	80	1.8		ZX
928 BIGB	30	1930	1933	2008	N11	W50	.784	16545	27.1	38	-B		C	1933	70	1.1		ZX
929 BIGB	30	1936	1937	1940	S22	E26	.526	16555	1.8	4	-N		C	1937	20	.2		ZX
930 BIGB	30	2139	2142	2208	S15	W64	.900	16541	26.1	29	-N		C	2142	80	1.9		ZX
931 BIGB	30	2206	2207	2211	S18	E30	1.000	16563	6.7	5	-N		C	2207	30			ZX
932 VORO	30	2339	2340	2343	N15	E90	1.000	16572	6.7	4	-F		C	2340	45		D	ZX
933 CULG	31	0200U	0203U	0207U	S18	W08	.293	16548	30.5	70	-F		P	0203	60	.6		ZX
934 BIGB	31	1719	1721	1723	S15	W76	.969	16533	26.0	10	-N		C	1721	60			ZX
935 BIGB	31	1722	1723	1727	N11	W65	.914	16545	26.8	5	-N		C	1723	20			ZX
936 HOLL	31	1723	1723	1735	S20	E15	.383	16555	1.8	12	-F	3	C		25		F	ZX

Hα SOLAR FLARES

DECEMBER 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill of Dist	CORR AREA Sq. Deg.	
GRP80937	31	1732+1	1733+0	1749	S21	E56	.842	16564	4.9	17	-N				50	1.0	
BIGB	31	1732	1733	1746	S21	E56	.842	16564	4.9	14	-B		C	1733	60	1.1	
HOLL	31	1733	1733	1751	S19	E56	.839	16564	4.9	18	-F	2	C		42		
HUAN	31	1736F		17330	S21	E57	.851	16564	5.0	30	-F	1	P				
938 BIGB	31	1735	1739	1807	S13	E90	1.000	0	7.5	32	-S		C	1735	50		ZX
939 BIGB	31	1908	1909	1923	S12	E54	.811	16563	4.8	15	-N		C	1909	30	.5	ZX

"REMARKS":

A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by high-speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the H and K lines of CaII.
P = Flare shows helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

DAILY FLARE INDICES
Includes all Flares

DECEMBER 1979

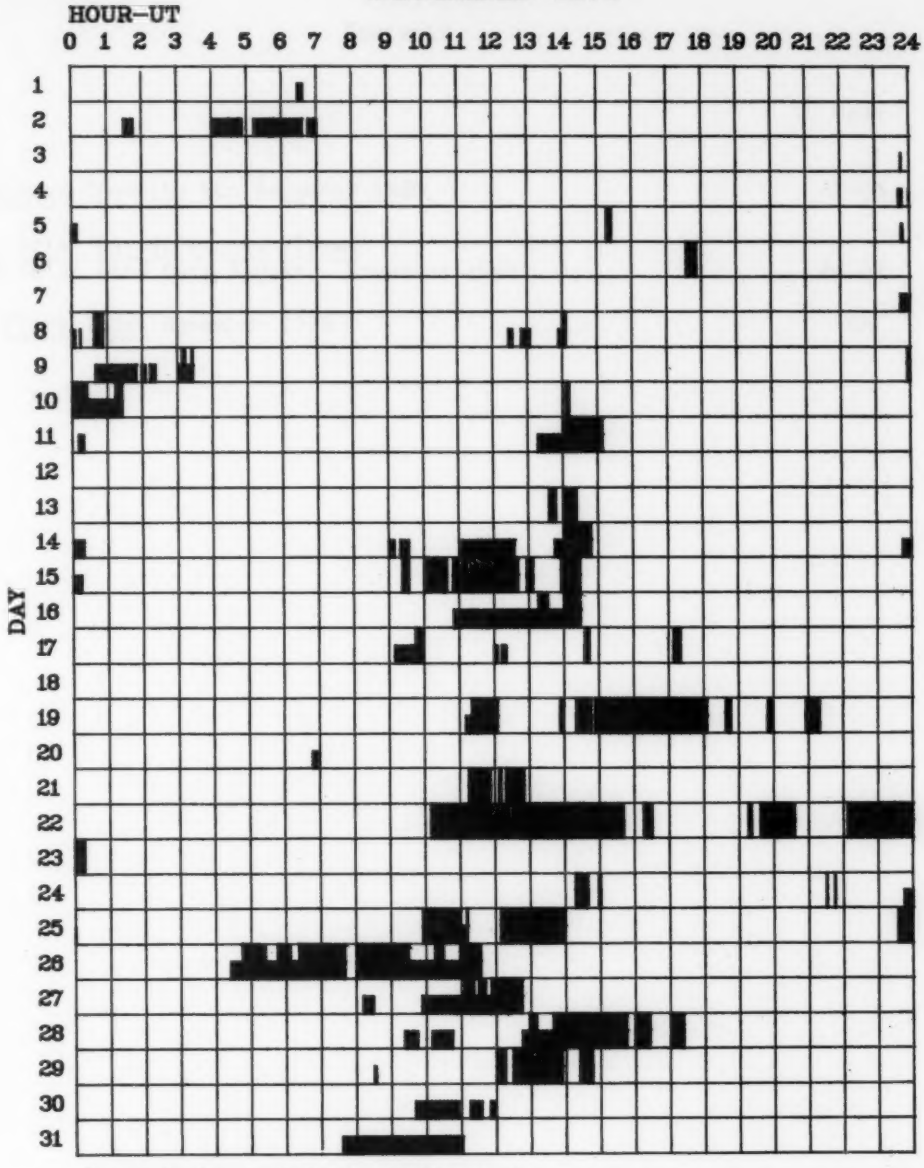
Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.
791201.	51.20	24.0	791212.	196.02	24.0	791223.	312.92	24.0
791202.	31.03	24.0	791213.	232.64	23.4	791224.	36.96	23.6
791203.	51.14	24.0	791214.	125.22	23.2	791225.	370.30	20.7
791204.	188.54	24.0	791215.	164.64	20.8	791226.	23.99	19.3
791205.	124.54	23.9	791216.	95.38	23.2	791227.	127.61	22.6
791206.	88.53	23.7	791217.	49.89	23.5	791228.	209.36	20.9
791207.	84.66	24.0	791218.	73.33	24.3	791229.	101.89	22.0
791208.	142.92	23.6	791219.	622.09	19.0	791230.	42.22	24.0
791209.	73.30	23.8	791220.	201.52	24.0	791231.	16.31	24.1
791210.	58.16	23.3	791221.	148.68	22.8			
791211.	133.67	22.4	791222.	222.21	15.2			

When no Flare Index is given, it is 0 for that day.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

DECEMBER 1979



Observatories included in total patrol:

Abastumani	Culgoora	Kanzelhoehe	Manila	Tashkent
Athens	Haute Provence	Kharkov	Monte Mario	Tel Aviv
Big Bear	Holloman	Kodaikanal	Palehua	Voroshilov
Bucharest	Huancayo	Locarno	Purple Mt.	Wendelstein
Catania	Istanbul	Lvov	Ramey	Yunnan

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

SGD

Mass

Ener

Regi

SGD 443 Part II (Comprehensive)

MISCELLANEOUS DATA

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MASS EJECTIONS FROM THE SUN

DECEMBER 1980

Station	Date 1980	Observed UT Start	Max	End	Location RA°	R/R_o	Wavelength	Type Event
HALE	Dec 01	1737E		2350D	004	1.13	H-alpha	Q
HALE	Dec 02	1810E		2023D	079	1.19	H-alpha	Q
HALE	Dec 02	1946E		2023D	231	1.11	H-alpha	Q
CULG	Dec 07	0545		0553			Meter	II Herringbone
HARV	Dec 07	1627		1632			Meter	II
CULG	Dec 08	2042		2056			Meter	II
HARV	Dec 08	2043		2053			Meter; dekameter	II
HARV	Dec 09	1607		1612			Meter	II
WEND	Dec 10	1222	1235	1313D	287	1.10	H-alpha	S
BIGB	Dec 10	2144	2147	2157	088	1.0	H-alpha	A
BIGB	Dec 10	2200	2210	2231	251	1.0	H-alpha	A
BIGB	Dec 11	1858	1910	1928	077	1.0	H-alpha	A
BIGB	Dec 11	2111	2119	2135	254	1.0	H-alpha	A
HARV	Dec 12	1656		1712			Decimeter; meter	IV
HALE	Dec 12	1818E		2259D	092	1.17	H-alpha	A
DWIN	Dec 15	1313.6		1313.8			Decimeter	IV
DWIN	Dec 16	0804.0		0815.0			Decimeter	IV Zebra patterns
DWIN	Dec 16	1149.6		1151.0			Decimeter	IV
BIGB	Dec 16	1547	1615	1703	102	1.0	H-alpha	A
BIGB	Dec 16	1721	1839	2040	105	1.0	H-alpha	A
BIGB	Dec 16	1920	1924	1931	260	1.0	H-alpha	A
BIGB	Dec 16	1923	1939	2007	096	1.0	H-alpha	A
DWIN	Dec 17	0845		0850			Decimeter	IV
DWIN	Dec 17	0932.1		0933.3			Decimeter	IV
DWIN	Dec 18	1100.8		1101.1			Decimeter	IV
DWIN	Dec 18	1305.0		1308.2			Decimeter	IV
DWIN	Dec 18	1326.5		1328.5			Decimeter	IV
DWIN	Dec 18	1333.0		1334.6			Decimeter	IV
DWIN	Dec 18	1345.8		1347.2			Decimeter	IV
DWIN	Dec 18	1401.3		1405.3			Decimeter	IV
DWIN	Dec 18	1430.0		1433.5			Decimeter	IV
DWIN	Dec 18	1442.1		1445.8			Decimeter	IV Fiber bursts
DWIN	Dec 18	1504.0		1505.0			Decimeter	IV
HARV	Dec 18	1926		1931			Meter	II
BIGB	Dec 18	2051	2103	2127	096	1.0	H-alpha	A
BIGB	Dec 19	1730	1743	1809	290	1.0	H-alpha	A
CULG	Dec 20	2052		2104			Meter	II
CULG	Dec 21	0408		0417			Meter	II
HARV	Dec 21	2227		2238			Decimeter	IV Pulsations
HARV	Dec 21	2244		2338			Decimeter; meter	IV Pulsations
BIGB	Dec 22	1735	1741	1817	105	1.0	H-alpha	A
BIGB	Dec 23	2115	2122	2144	100	1.0	H-alpha	A
CULG	Dec 23	2116.5		2117			Decimeter; meter	Possible II, Weak
WEND	Dec 24	1305	1313	1337	102	0.98-1.10	H-alpha	S
BIGB	Dec 24	1559	1605	1645	067	1.0	H-alpha	A
BIGB	Dec 24	1935	1941	1949	085	1.0	H-alpha	A
BIGB	Dec 24	2025	2115	2209	104-109	1.0	H-alpha	SP
BIGB	Dec 24	2229	2245	2305	106	1.0	H-alpha	SP
BLEN	Dec 25	0955.5		1440D			Decimeter	IV Pulsations
HARV	Dec 25	1510		2345			Decimeter; meter	IV Intermittent
LEAR	Dec 26	1012.6		1049.0			Meter	II
DWIN	Dec 27	0826.5		0829.0			Decimeter	IV
DWIN	Dec 27	1007.3		1023.5			Decimeter	IV

MASS EJECTIONS FROM THE SUN

DECEMBER 1980

Station	Date 1980	Observed UT Start	Max	End	Location RA°	R/R_0	Wavelength	Type Event
BIGB	Dec 28	1757	1800	1809	195	0.46	H-alpha	A
WEIS	Dec 29	1317.5		1328.5			Meter	II
BIGB	Dec 29	2125	2144	2220	225	0.54	H-alpha	A
HALE	Dec 30	2006E	2021	2251	262	1.38	H-alpha	Q
BIGB	Dec 31	1834	1839	1853	104	1.0	H-alpha	A

QUALIFIERS ON START, MAX AND END TIMES
D = event ended after the tabulated time
E = event began before the tabulated time
U = uncertain time

TYPE OF EVENT
A = eruptive active region prominence
CB = coronal cloud bubble
D = coronal depletions
E = coronal enhancement
EL = coronal expanding loop
II = Type II radio burst
IVm = moving Type IV radio burst
Q = eruptive quiescent prominence
R = coronal ray or streamer
S = flare-surge if there is aknown flare association
SP = flare-spray if there is a known flare association
* = movement may be caused by ionospheric refraction

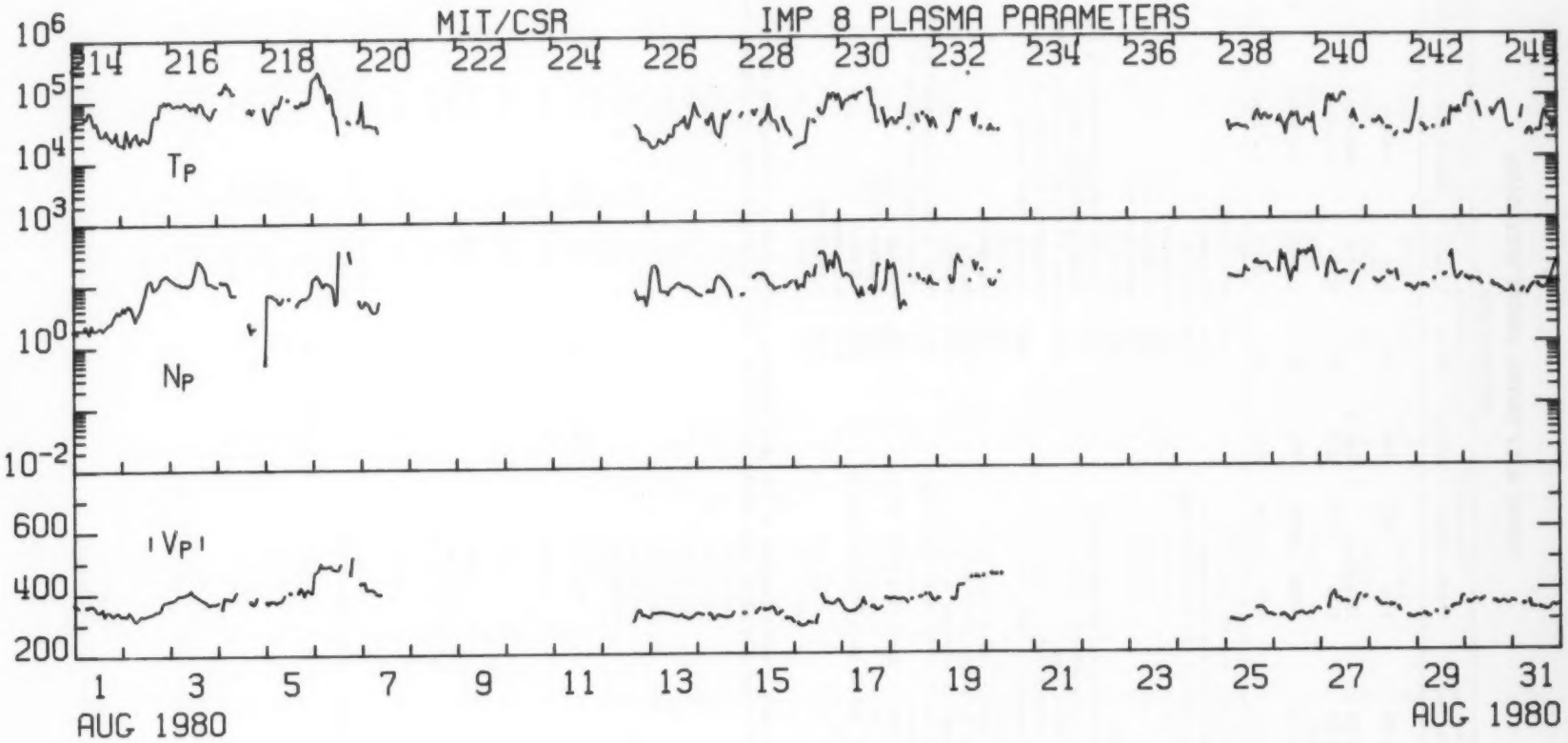
REPORTING STATIONS
BIGB = Big Bear
BLEN = Bleien
CULG = Culgoora
DWIN = Dwingeloo
GEOR = Georgiana
HALE = Haleakala
HAOC = High Altitude Observatory's SMM Coronagraph/Polarimeter
HAOK = High Altitude Observatory's MARK-III Coronameter at Mauna Loa
HARV = Harvard (Fort Davis)
KHAR = Kharkov
LEAR = Learmonth
MANI = Manila
MITK = Mitaka
NRLC = Naval Research Laboratory's White-Light Coronagraph Experiment on P78-1
PALE = Palehua
SGMR = Sagamore Hill
TELV = Tel Aviv
WEIS = Weissenau
WEND = Wendelstein
UDAI = Udaipur

NOTE: Because only a small fraction of the data taken by satellite-borne coronagraph had been analyzed at the time this table was assembled, many events are defined solely by ground-based observatory reports.

64
Misc
Aug 80

IMP 8 SOLAR WIND PLASMA

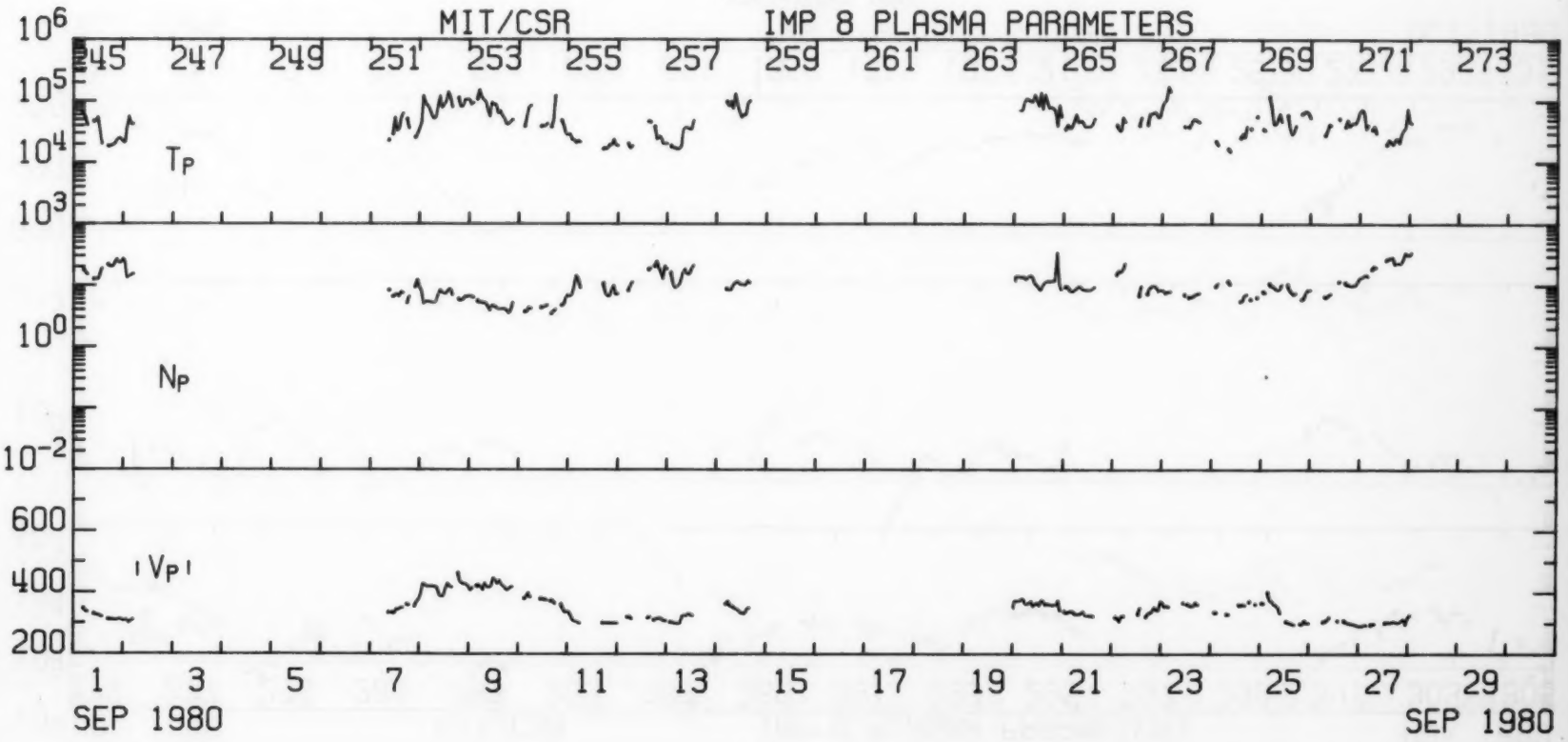
AUGUST 1980



MIT 6/22/81 PRELIMINARY ONE-HOUR AVERAGES

IMP 8 SOLAR WIND PLASMA

SEPTEMBER 1980



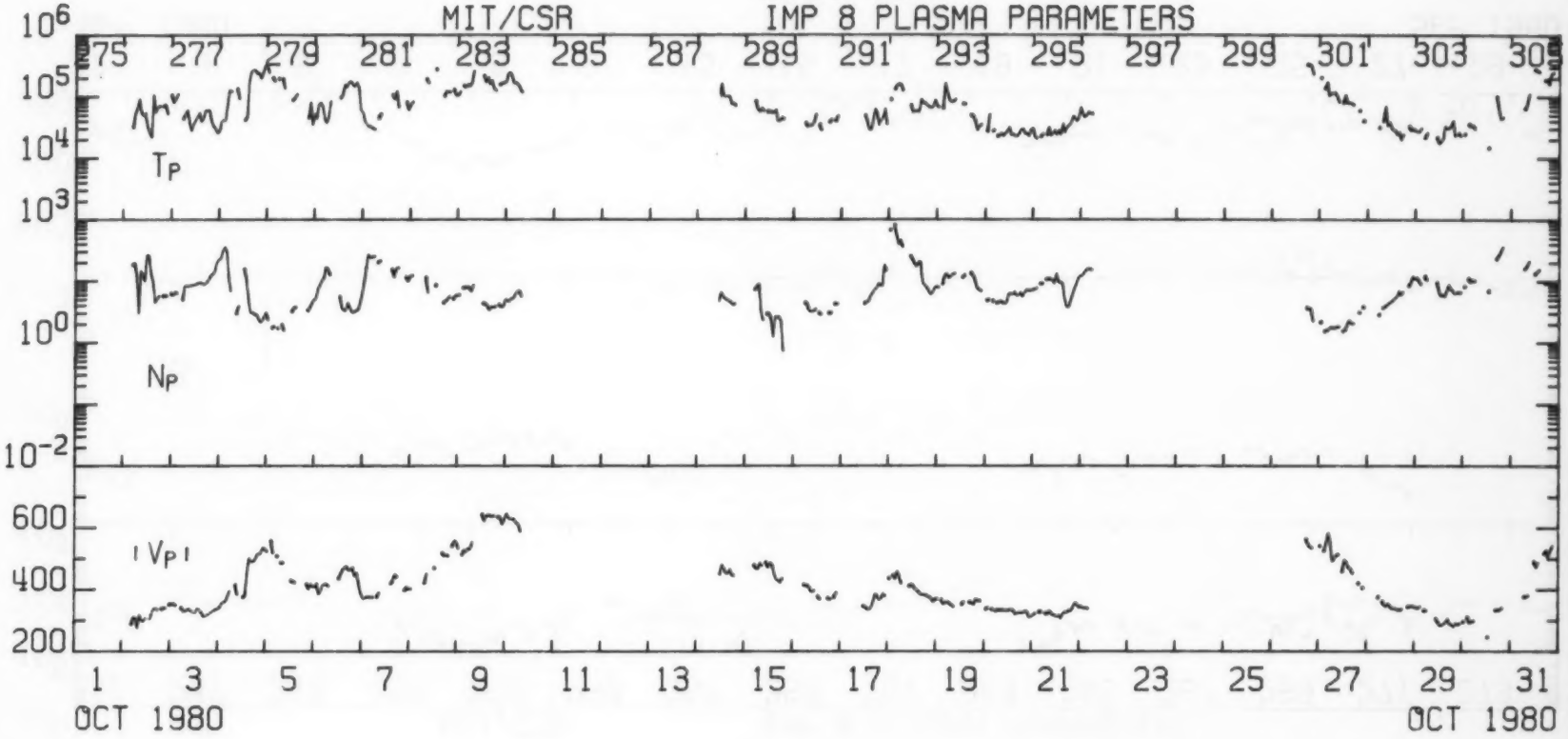
MIT 6/23/81 PRELIMINARY ONE-HOUR AVERAGES

65
Misc
Sep 80

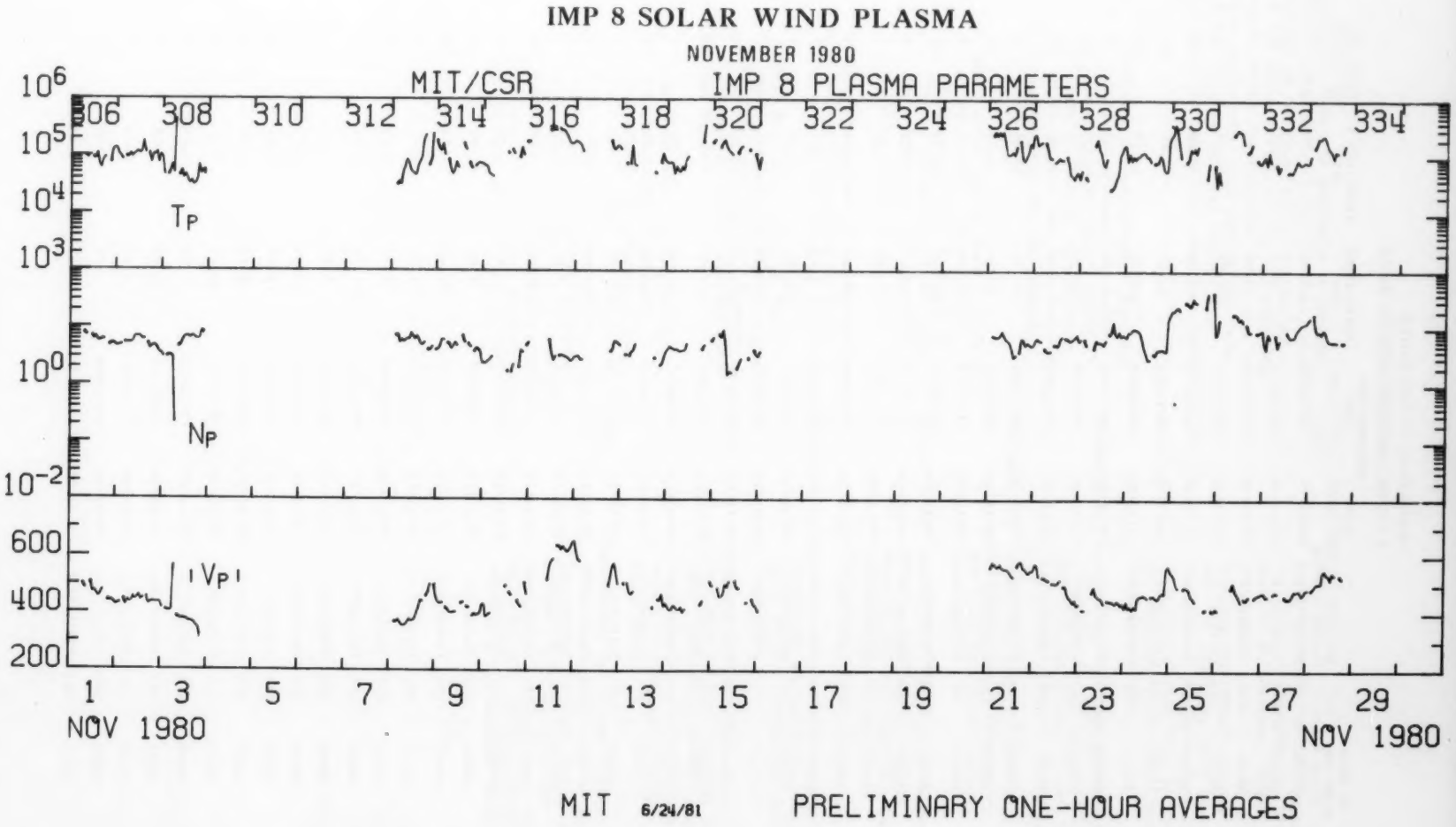
99
Misc
Oct 80

IMP 8 SOLAR WIND PLASMA

OCTOBER 1980



MIT 6/23/81 PRELIMINARY ONE-HOUR AVERAGES



67
Misc
Nov 80

REGIONAL FLARE INDEX

Includes all Flares

NOVEMBER 1979

MC MATH PLAGE NO.	LAT	CMP DATE	DATE FIRST FLARE	DATE LAST FLARE	FLARE-INDEX SUM	FLARE-INDEX MEAN	TOTAL NO. OF FLARES
16396	S12	79/11/01.2	79/11/05	79/11/05	1.96	1.96	1
16397	S19	79/11/01.3	79/10/29	79/10/31	5.71	1.90	2
16404	S29	79/11/01.4	79/11/02	79/11/02	3.38	3.38	1
16398	N16	79/11/02.4	79/11/27	79/11/27	541.90	45.16	71
16399	N27	79/11/03.4	79/10/27	79/11/01	12.98	2.16	10
16402	N13	79/11/04.4	79/10/28	79/11/11	81.84	5.46	21
16401	S14	79/11/04.4	79/10/29	79/11/09	155.86	12.99	34
16405	N26	79/11/06.0	79/10/31	79/10/31	.92	.92	1
16406	N17	79/11/06.3	79/11/31	79/11/13	152.44	12.50	38
16412	S22	79/11/06.4	79/11/05	79/11/13	181.60	20.18	48
16408	N14	79/11/07.6	79/11/01	79/11/14	15.02	1.37	5
16410	S23	79/11/07.7	79/11/02	79/11/13	17.39	1.45	11
16409	N22	79/11/07.4	79/11/03	79/11/10	10.71	1.34	4
16413	S15	79/11/09.5	79/11/04	79/11/15	1878.03	156.50	120
16417	S17	79/11/10.6	79/11/05	79/11/11	22.49	3.21	6
16415	S12	79/11/10.9	79/11/05	79/11/05	.88	.88	1
16414	N24	79/11/11.1	79/11/04	79/11/14	76.61	6.96	28
16416	S30	79/11/11.3	79/11/05	79/11/10	9.64	1.61	6
16418	S16	79/11/12.4	79/11/05	79/11/17	413.64	31.82	93
16419	N32	79/11/13.0	79/11/06	79/11/19	507.33	36.23	49
16421	N11	79/11/14.2	79/11/08	79/11/20	574.19	51.86	33
16422	S 6	79/11/14.2	79/11/16	79/11/23	58.41	13.68	19
16423	S17	79/11/14.9	79/11/13	79/11/19	16.13	2.30	5
16424	S 1	79/11/15.2	79/11/12	79/11/19	41.06	5.13	10
16425	N17	79/11/15.8	79/11/11	79/11/21	404.88	36.81	18
16433	S33	79/11/16.7	79/11/14	79/11/22	142.08	15.79	49
16429	N12	79/11/17.3	79/11/22	79/11/22	2.49	2.49	3
16426	N31	79/11/17.6	79/11/12	79/11/25	126.86	3.06	49
16430	S12	79/11/18.1	79/11/13	79/11/13	.84	.84	1
16436	N18	79/11/20.2	79/11/17	79/11/17	1.92	1.92	1
16437	N26	79/11/21.3	79/11/14	79/11/23	45.15	4.52	16
16449	N14	79/11/21.5	79/11/23	79/11/27	27.30	5.46	13
16438	N17	79/11/22.6	79/11/20	79/11/23	8.70	2.18	3
16439	S17	79/11/23.0	79/11/16	79/11/27	145.36	12.11	36
16441	S13	79/11/23.3	79/11/19	79/11/28	5.28	.53	2
16446	N27	79/11/23.4	79/11/20	79/11/24	13.35	2.73	4
16442	S24	79/11/23.9	79/11/21	79/11/29	68.73	7.64	25
16453	N19	79/11/25.1	79/11/24	79/11/27	45.43	11.37	11
16443	S14	79/11/25.4	79/11/20	79/11/30	56.15	6.31	33
16448	N23	79/11/27.0	79/11/27	79/12/01	26.39	5.28	2
16450	N13	79/11/28.4	79/11/24	79/12/03	14.26	1.43	6
16469	S13	79/11/29.1	79/12/33	79/12/35	7.03	2.34	6
16451	N23	79/11/29.8	79/12/04	79/12/04	.84	.84	1
16452	N13	79/11/30.7	79/11/27	79/12/02	25.37	4.33	6

SOME OTHER SOURCES OF DATA

Data Available: Some data available in publication form are cited here. A list is given, along with addresses of the responsible institutions. The WDC-A for Solar-Terrestrial Physics publishes the Toyokawa, Ottawa and Penticton radio data in its monthly publication, *Solar-Geophysical Data*. The WDC-A for Solar-Terrestrial Physics also receives most of the periodicals when they become available.

Belgium: *Bulletin d'Observations: Activite Solaire - Observations Radio-electriques Solaires - 600 MHz (Humain, Belgium)* Observatoire Royal de Belgique, Ave. Circulaire 3, Brussels, Belgium (monthly since 1962)

Canada: *Solar Noise Observations at 2800 Mc/s (Ottawa - ARO) and 2700 Mc/s (Penticton - DRAO)* Series C Monthly Report, National Research Council, Radio Astronomy Section Ottawa 7, Ontario, Canada (since 1947)

France: *Carte Synoptiques de la Chromosphere Solaire* Observatoire de Paris, 92 Meudon, France (monthly since 1931)

Germany: *Daily Mean Value of Solar Flux Density* Heinrich-Hertz Institut, 1199 Berlin-Adlershof, Rudower Chaussee 5, G.D.R. (monthly since Jul 1957)

Italy: *Solar Phenomena - Monthly Bulletin and Photographic Supplement* Osservatorio Astronomica di Roma, Monte Mario, Rome, Italy (monthly since 1958); *Osservazion Solari, Solar Flux and Distinctive Events* Osservatorio Astronomico Di Trieste (quarterly since 1965); *Solar Observations made at Catania Astrophysical Observatory* (annually since 1967)

Japan: *Monthly Report of Solar Radio Emission* Radio Astronomy Section, Research Institute of Atmospherics, Nagoya University, Toyokawa, Japan (since 1956); *Solar Activity Chart* WDC-C2, Toyokawa Observatory, Nagoya University, Toyokawa, Japan (annually since 1968); *IAU Quarterly Bulletin on Solar Activity* Tokyo Astronomical Observatory, Mitaka, Tokyo, Japan (since 1978)

Netherlands: *Geomagnetic Data* IAGA Bulletin No. 12 (1932-69), No. 32 (since 1970) IUGG Publications Office, 39 ter, Rue Gay-Lussac, Paris V, France (annually)

Philippines: Manila Observatory "Solar Maps and Activity", Manila Observatory, P.O. Box 1231, Manila, Philippines (monthly)

Switzerland: Bulletin of "Berne Solar Observations", Institute of Applied Physics, Div. of Solar Observations, Sidlerstrasse 5, 3012 Berne, Switzerland (since 1968)

Taiwan: *Report on Sunspot Observations* Taiwan Provincial Weather Bureau Observatory, Taipei, Taiwan (quarterly since 1957)

USSR: СОЛНЕЧНЫЕ ДАННЫЕ *(Solar Data)* USSR Academy of Science (monthly since 1958); КОСМИЧЕСКИЕ ДАННЫЕ *(Cosmic Data)* (monthly since 1962); *Magnetic Fields of Sunspots* (bimonthly since 1964)

USA: *Preliminary Report and Forecast of Solar-Geophysical Activity* Space Environment Services Center, NOAA, Boulder, Colorado 80303 USA (weekly); *Solar-Geophysical Data* NOAA, Boulder, Colorado 80303 USA (monthly since November 1955)

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UAG-47 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1973," June 1975, 144 pp, $2.10 (microfiche only).

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